SEQUENCE LISTING

TECH CENTER 1600/2900 ECH CENTER 1600/2900

5 <110> Gure, Ali

Stockert, Elisabeth

Scanlan, Matthew

10 Jager, Dirk

Old, Lloyd

15 Chen, Yao-Tseng ALCEIVED

ANG 312001

<120> SMALL CELL LUNG CANCER ASSOCIATED ANTIGENS AND USES THEREOF

20

<130> L0461/7073

<140> US 09/489,101

<141> 2000-01-21

30

<160> 22

35

<170> PatentIn version 3.0

40

<210> 1

<211> 29

45 <212> DNA

<213> Homo sapiens

50

<400> 1 catgaatatg aacatgggta tgaacatgg

55 <210> 2

	<211>	23						
	<212>	DNA						
5	<213>	Homo	sapiens					
10	<400>	2	caaactcaca	cta				23
10	Logoay		caaacccaca	ccg				
	<210>	3						
15	<211>	1085						
	<212>	DNA						
20	<213>	Homo	sapiens					
20								
)	<400>	3	gcatgtacaa	catgatggag	acqqaqctqa	agccgccggg	cccgcagcaa	60
25						ccggcggcaa		120
						tgtggtcccg		180
30						agatcagcaa		240
50						tcatcgacga		300
						accggccccg		360
35						ggctgctggc		420
						gcgcgggcgt		480
40						gctacagcat		540
40						gcgcagcgca		600
						tgaccagctc		660
45						agggcacccc		720
						ccagccccc		780
50							gatcagcatg	840
30							catgtcccag	900
							cctctcacac	960
55							acgagggaaa	1020
	acycy	aggge	cygacaycya	~~~9949999	33-3			

```
tgggaggggt gcaaaagagg agagtaagaa acagcatgga gaaaacccgg tacgctcaaa
                                                                         1080
                                                                         1085
    aaaaa
5
    <210> 4
    <211> 4091
10
    <212> DNA
    <213> Homo sapiens
15
    <220>
    <221> Unsure
20
    <222>
           (2313)..(2313)
    <223> n = a, c, t or g
25
    <220>
30
    <221> Unsure
    <222> (2540)..(2540)
    <223> n = a, c, t or g
35
40
    <220>
    <221> Unsure
    <222> (2361)..(2361)
45
    <223> n = a, c, t or g
50
    <400> 4
                                                                           60
    coggoogtet atgetecagg coetetecte geggtgeegg tgaaccegee ageogeeeeg
55
    atgtacagca tgatgatgga gaccgacctg cactcgcccg gcggcgccca ggcccccacg
                                                                          120
```

aacctctcgg gccccgccgg ggcgggcggc ggcgggggg gaggcggggg cggcggcggc

240 ggcgggggcg ccaaggccaa ccaggaccgg gtcaaacggc ccatgaacgc cttcatggtg 300 tggtcccgcg ggcagcggcg caagatggcc caggagaacc ccaagatgca caactcggag 5 360 atcagcaage geetggggge egagtggaag gteatgteeg aggeeggaa geggeegtte 420 atcgacgagg ccaagcggct gcgcgcgctg cacatgaagg agcacccgga ttacaagtac 10 480 eggeegege geaagaceaa gaegetgete aagaaggaea agtaeteget ggeeggeggg ctcctggcgg ccggcgggg tggcggcggc gcggctgtgg ccatgggcgt gggcgtgggc 540 gtgggcgcgg cgcccgtggg ccagcgcctg gagagcccag gcggcgcgc gggcgcgcg 600 15 tacgcgcacg tcaacggctg ggccaacggc gcctaccccg gctcggtggc ggccgcggcg 660 720 geegeegegg ceatgatgea ggaggegeag etggeetaeg ggeageaeee eggegeggge 20 ggcgcgcacc cgcaccgcac cccggcgcac ccgcacccgc accacccgca cgcgcacccg 780 cacaaccege ageceatgea eegetacgae atgggegege tgeagtacag eeceatetee 840 aactegeagg getacatgag egegtegeec tegggetaeg geggeeteec etaeggegee 900 25 960 geggeegeeg cegeegeege geaceagaac teggeegtgg eggeggege ggeggeggeg 1020 geogegtegt egggegeeet gggegegetg ggetetetgg tgaagtegga geeeagegge 30 agecegeeeg eeceagegea etegegggeg eegtgeeeeg gggacetgeg egagatgate 1080 agcatgtact tgcccgccgg cgagggggg gacccggcgg cggcagcagc ggccgcggcg 1140 1200 cagageegge tgeacteget geegeageac taccagggeg egggegeggg egtgaaegge 35 1260 acggtgcccc tgacgcacat ctagcgcctt cgggacgccg gggactctgc ggcggcgacc 1320 40 cagacgttcc cacattettg teaaaaggaa aataetggag acgaacgeeg ggtgaegegt 1380 1440 gtcccccact caccttcccc ggagaccctg gcgaccgccg ggcgctgaca ccagacttgg 1500 tttagactga acttcggtgt tttcttgaga cttttgtaca gtatttatca cctacggagg 45 1560 aagcggaagc gttttctttg ctcgagggga caaaaaagtc aaaacgaggc gagaggcgaa 1620 gcccactttt gtataccggc cggcgcgctc actttcctcc gcgttgcttc cggacggcgc 50 1680 cgaccgccgg agcccaagtg acgcggagct cgtcgcattt gttataaatg tagtaaggca 1740 ggtccaagca cttacaagtt ttttgtagtt gttaccgctc ttttgggttg gtttgttaat 1800 ttatacaaag agattaccac caccacccc tccttcagac ggcggagtta tattctgggt 55 tttgtaaaac tttatgtatc tgagcatttc cattttttt tttgggtttt gtattatttc 1860

ttgtaaatgc attgtgaaaa attttatttt cggcgttgca atgcggggag gagaagtcag 1920 1980 attatqtaca tagttttcta aaaagccttt cttctaaaaa cgaaaaaaga cccccaccca 5 aaatgtttcg agtcaacaaa tttaagagac agagcccatt ttctccataa atttgtaaca 2040 2100 tgcctatttt tatgtgcatg ttttatgagt tcaaaatgca atgagggaaa tctgacaggg 2160 aaattatctg tatgaactaa aagtaaggga acccggggaa tgggaggaca ggatttttca 10 2220 aggaaccttt ttcaatgaaa gagaaggaag ttaaaaccta taggttattt tgtagagctg 2280 agtgttaata cgggccgaga aataaaagta tcttctgctc cggctgtttc actgcggacg 15 2340 gctggggctg ctgcgcgtta ccttgctgca acngggcgcc ttccacctgg ctgggggtct 2400 gcgccacagt ttggtccaga ngwgggagga ggaagggaag accccagtgg tgggaccctg gaccaggcca tggatgaagg acaaagacca gggcaggtca cgggtttccc aattccccag 2460 20 caattaagat ttcgagcaga atttatctaa atgtgtttca aggaaacaca atcgctgaac 2520 caaaacgtac tgcagccgan cccctccgt ccatcctctg cccctccccc tggcttcttt 2580 25 ctcttgggaa aacgggcaaa ataattgtgc tggattctca cacacacaga aatatcgacc 2640 2700 atcaccetee eeegegtgaa etgggatgea agttgetaae egatgtgaae geaaaatgee ttgttcatta ttcctgacga gatcttgagg ttgtttgatg ctttaaattt tttaattata 2760 30 ttattttcta ggtgtttatt ggtacattgc agtttttttt ttgaaattta aaaatttctg 2820 taaaactttg tcttcaagta atctgacagc attaaatatt gcatttaaaa attatactgt 2880 35 2940 agcaaataca tttaaaaatt aatcacaacg ttaagatgaa attatatttt tggaaaaaaa aaacacttga agcccagatg gaaatacgtt tatttcagca gccttaggtt tcccctcgct 3000 3060 ttctcaacac ccttccttgt cctggagtat ggactgtccg tccaaaagtg agcctatgct 40 ataagtttaa tgagaaccga attcagcctg cattcgagaa tagctttaag tataatgctg 3120 atctgacaat tgacgtgtaa tttgggaagt cattttgata attttgctta aaccactcat 3180 45 3240 tcgttaaagt gattacaaaa aagttcaaga atgatgtcca ctgctttcta acaagataat 3300 aaacccccc cctctttct ttttctttat ttttatttct tttagctatt tgatcctttc 3360 tgaagcagtt gtttctggaa gagtctgtgc gcccatggat ggctgagcac cactacgact 50 3420 tagtccggga taagggcctc cccagtcctc tccgggagat gatttgggaa attttataat 3480 gcttgttctg ttaactcacc gggaccttga gggtccaatg ggaccttgag ggttttctct 55 3540 gaaatataca aacttaaagg actetetetg aggttetttg aetgaegtee acteteagte tggcccctgt gctcccctgt gtgtaccctg gagtttctgt gtccaattgt tggcatctag 3600

3660 gtcttggctc aagattagga tgtgggcccc actttagagg cacagactat gaaaagctga 3720 gttagtgcgc ccgggacgcc aggcaagcag cttttacagt ttggcatctt attgcaggtg 5 3780 cttcgtgcac agtcagctga aatagccaat gccaggtgct ccaaccacct tatttccttg 3840 ttttgttgat tagaacaaca cagaaaaaag caaatataaa tttttaatga ctccatttaa 10 aaatatcaca gggtgggggc aaggaaatta gctgagattc atctcaggat tgagattcta 3900 3960 tececette eeegeeeea geagtgtege tecaatteaa attagtggag aaaagattae agtaggccct gagccgactg tgaattcggt gcttggccaa ggtaacactc atcgtattca 4020 15 4080 cggagraaat actatatgat gatagttatt atattatatg acgacttcat tcacttccca 4091 aatcacaggg t <210>

 $\mathbb{R}^{|20}$

<211> 1602

25 <212> DNA

<213> Homo sapiens

30

<400> 60 atgeteetgg aegeggtee geagtteeeg gecategggg tgggeagett egegegeeae catcaccact cogcogogo ggcggcggcg gctgccgccg agatgcagga ccgtgaactg 120 35 180 agcctggcgg cggcgcagaa cggcttcgtt gattccgccg ccgcgcacat gggagccttc 240 aageteaace egggegegea egagetgtee eegggeeaga geteggegtt eaegtegeag 40 300 ggccccggcg cctaccccgg ctccgctgcg gctgccgctg cggccgcagc gctcgggccc 360 cacgccgcgc acgttggctc ctactctggg ccgcccttca actccacccg ggacttcctg 420 ttccgcagcg cgcggcttcc ggggacttcg gcgccgggcg gcgggcagca cgggctgttc 45 480 gggccgggcg cgggcgcct gcaccacgcg cactcggacg cgcagggcca cctcctcttc 540 ccgggcctgc cagagcagca cgggccgcac ggctcgcaga atgtgctcaa cgggcagatg 50 600 cgcctcgggc tgcccggcga ggtgttcggg cgctcggagc aataccgcca ggtggccagc ccgcggaccg accectacte ggcggcgcaa etecacaace agtacggcce catgaatatg 660 720 aacatgggta tgaacatggc agcagccgcg gcccaccacc accaccacca ccaccaccac 55 cccggtgcct ttttccgcta tatgcggcag cagtgcatca agcaggagct aatctgcaag 780

		tggatcgaco	ccgagcaact	gagcaatccc	aagaagagct	gcaacaaaac	tttcagcacc	840
		atgcacgago	tggtgacaca	cgtctcggtg	gagcacgtcg	gcggcccgga	gcagagcaac	900
	5	cacgtctgct	tctgggagga	gtgtccgcgc	gagggcaagc	ccttcaaggc	caaatacaaa	960
		ctggtcaaco	e acateegegt	gcacacagge	gagaaaccct	tcccctgccc	cttcccgggc	1020
	10	tgtggcaaag	g tettegegeg	ctccgagaac	ctcaagatcc	acaaaaggac	ccacacaggg	1080
	10	gagaagccgt	tccagtgtga	gtttgagggc	tgcgaccggc	gcttcgccaa	cagcagcgac	1140
		aggaagaago	c acatgcacgt	ccacacctcc	gataagccct	atctctgcaa	gatgtgcgac	1200
	15	aagtcctaca	a cgcaccccag	ctcgctgcgg	aagcacatga	aggtccatga	gtcctccccg	1260
		cagggttctg	g aatcctcccc	ggccgccagc	tccggctatg	agtcgtccac	gcccccgggg	1320
	20	ctggtgtccc	ccagcgccga	gccccagagc	agctccaacc	tgtccccagc	ggcggcggca	1380
\mathbb{D}		gcggcggcgg	g cggctgcggc	ggcggcggcc	gcggtgtccg	cggtgcaccg	gggcggaggc	1440
U		tcgggcagto	g geggegeggg	aggcggctca	ggcggcggca	gcggcagtgg	cgggggcggc	1500
	25	ggcggggcgg	g geggegggg	cggcggcagc	tctggcgggg	gcagcgggac	agccgggggt	1560
		cacagcggcd	tctcctccaa	cttcaatgaa	tggtacgtgt	ga		1602
	30	<210> 6						
		<211> 132	22					
		<212> DNA						
	35		no sapiens					
	40	<400> 6						
		ggaattccg	g gcgcggttgt	gagtagtacc	gggagtgggg	tgatcccggg	ctaggggagc	60
		geggegeee	g atcgggctta	gtcggagctc	cgaagggagt	gactaggaca	cccgggtggg	120
	45	ctacttttct	tccggtgctt	ttgcttttt	tttcctttgg	gctcgggctg	agtgtcgccc	180
		actgagcaaa	a gattccctcg	taaaacccag	agcgaccctc	ccgtcaattg	ttgggctcgg	240
	50	gagtgtcgc	g gtgccccgag	cgcgccgggc	gcggaggcaa	agggagcgga	gccggccgcg	300
		gacggggcc	c ggagcttgcc	tgcctccctc	gctcgcccca	gcgggttcgc	tcgcgtagag	360
		cgcagggcg	c gcgcgatgaa	ggcggtgagc	ccggtgcgcc	cctcgggccg	caaggcgccg	420
	55	tcgggctgc	g gcggcgggga	gctggcgctg	cgctgcctgg	ccgagcacgg	ccacagcctg	480
		ggtggctcc	g cagccgcggc	ggcggcggcg	gcggcagcgc	gctgtaaggc	ggccgaggcg	540

	gcggccgacg	agccggcgct	gtgcctgcag	tgcgatatga	acgactgcta	tagccgcctg	600	
5	cggaggctgg	tgcccaccat	cccgcccaac	aagaaagtca	gcaaagtgga	gatcctgcag	660	
3	cacgttatcg	actacatcct	ggacctgcag	ctggcgctgg	agacgcaccc	ggccctgctg	720	
	aggcagccac	caccgcccgc	gccgccacac	cacccggccg	ggacctgtcc	agccgcgccg	780	
10	ccgcggaccc	cgctcactgc	gctcaacacc	gacccggccg	gcgcggtgaa	caagcagggc	840	
	gacagcattc	tgtgccgctg	agccgcgctg	tccaggtgtg	cggccgcctg	agcccgagcc	900	
	aggagcacta	gagagggagg	gggaagagca	gaagttagag	aaaaaaagcc	accggaggaa	960	
15	aggaaaaaac	atcggccaac	ctagaaacgt	tttcattcgt	cattccaaga	gagagagagg	1020	
	aaagaaaaat	acaactttca	ttctttcttt	gcacgttcat	aaacattcta	catacgtatt	1080	
20	ctcttttgtc	tcttcattta	taactgctgt	gaattgtaca	tttctgtgtt	ttttggaggt	1140	
	gcagttaaac	ttttaagctt	aagtgtgaca	ggactgataa	atagaagatc	aagagtagat	1200	
	ccgactttag	aagcctactt	tgtgaccaag	gagctcaatt	tttgttttga	agctttacta	1260	
25	atctaccaga	gcattgtaga	tattttttt	ttacatctat	tgtttaaaat	agccggaatt	1320	
	CC						1322	
30								
	<210> 7							
	<211> 2389							
35	<212> DNA							
	<213> Hom	o sapiens						
40								
	<400> 7 cggctcagcg	ggggccgagg	ccatgttccc	ggtgtttcct	tgcacgctgc	tggccccccc	60	
						ccttcccgcc	120	
45						cccgcttctt	180	
						cgcccacgcc	240	
50						ccgccgccca	300	
						ctgccgcgcc	360	
						: ctccggcgcc	420	
55						cegeeteege	480	
			, , ,, ,					

egecactate geogeggegg eggecacege egtegtagee ceaacetega eggtegeegt 540 ggccccggtc gcgtctgcct tggagaagaa gacaaagagc aaggggccct acatctgcgc 600 5 tetgtgegee aaggagttea agaaeggeta caateteegg aggeaegaag ceateeaeae 660 gggagccaag geeggeeggg teeeeteggg tgetatgaag atgeegaeea tggtgeeeet 720 gagcetectg agegtgeece agetgagegg ageeggeggg ggagggggag aggegggtge 780 10 cggcggcggc gctgccgcag tggccgccgg tggcgtggtg accacgaccg cctcggggaa 840 gcgcatccgg aagaaccatg cctgcgagat gtgtggcaag gccttccgcg acgtctacca 900 15 960 cctgaaccga cacaagctgt cgcactcgga cgagaagccc taccagtgcc cggtgtgcca 1020 geagegette aagegeaagg accgeatgag etaceaegtg egeteaeatg aeggegetgt 1080 gcacaagece tacaactget eccaetgtgg caagagette teeeggeegg ateaeeteaa 20 cagtcacgtc agacaagtgc actcaacaga acggcccttc aaatgtgaga aatgtgaggc 1140 1200 agetttegee aegaaggate ggetgeggge geacacagta egacaegagg agaaagtgee 1260 atgtcacgtg tgtggcaaga tgctgagctc ggcttatatt tcggaccaca tgaaggtgca 1320 cagccagggt cctcaccatg tetgtgaget etgcaacaaa ggtactggtg aggtttgtee aatggcggcg gcagcggcag cggcggcagc ggcagcagcg gcagcagtag cagccctcc 1380 30 cacagetgtg ggetecetet egggggegga gggggtgeet gtgagetete agecaettee 1440 ctcccaaccc tggtgagctc caagttggtt gcgggggaga ggggagaatg gagtagagtc 1500 35 cettggtaca agetectete ecceetettt teccaceaae teetatttee etaceaaeea 1560 aggageetee agaaggaaag gaggaagaaa tgttttetta ggggaatteg etaggtttta 1620 acgatttgct tctcctgctc ctcttctatc agacctgacc ccacacaaac ctgtcccctc 1680 40 ggttgtgttg aagtcccctg gacagtgggc aggggtggca gaggacacga gcagccactg 1740 cccgtacccc ctctcctctc tgtaagccca tgccctgtct tcccagggac ttgtgagcct 1800 45 cttecetega eggteetett eteteettee agteetetee ecetgetgte tgeageeeet 1860 1920 ccccggggag ttggtgcttt cttttccttt ttttttttt ttccaggggg agggaggaga 1980 ggaaggaggg ggatcagagc tgtcccaaag agggaaagcg gtgaggtttg aggaggggca 50 2040 gaagcagggc cggcaaaggt tgtaccttca taaggtggta tcggggggtt ggggtcaggc 2100 cctgaacatc gtcctacttg agaatctgtc aggggaaaaa gtcaagggga gcaggaggaa 55 2160 gagecaggag ggecagagge agagaagaga tggagtetta ggggecaggg tgagecaggg 2220 gtccagggcc tagaggtgct tctggggggg ggggaatgca gccagtgtcc ccctccctc

	ttccacccca	gctccagccc	tggtcttgtc	ttttcatccc	tcttccccac	gacagaagaa	2280
5	gttgtggccc	tggcatgtca	tcgtgttcct	gtgtcccctg	catgtacccc	accetecace	2340
3	ccttcctttt	gcgcggaccc	cattacaata	aattttaaat	aaaatcctg		2389
10	<210> 8						
10	<211> 1860	l					
	<212> DNA						
15	<213> Homo	sapiens					
20	<400> 8 gggacgtgag	ccgctgcgcc	caccgggcta	gacccggcgc	catcatgctg	cttctgccaa	60
$\overline{}$	gcgccgcgga	cggccggggc	accgccatca	cccacgctct	gacctctgcc	tctacactct	120
25	gtcaagttga	acctgtggga	agatggtttg	aagcttttgt	taagaggaga	aacagaaatg	180
23	cttctgcctc	ttttcaggaa	ctggaggata	agaaagagtt	atccgaggaa	tcagaagatg	240
	aagaattgca	gttggaagag	tttcccatgc	tgaaaacact	tgatcccaaa	gactggaaga	300
30	accaagatca	ttatgcagtt	cttggacttg	gccatgtgag	atacaaggct	acacagagac	360
	agatcaaagc	agctcataaa	gcaatggttt	taaaacatca	cccagacaaa	cggaaagcag	420
25	ctggtgaacc	aataaaagaa	ggagataatg	actacttcac	ttgcataact	aaagcttatg	480
35	aaatgttatc	tgatccagtg	aaaagacgag	catttaacag	tgtagatcct	acttttgata	540
	actcagttcc	ttctaaaagt	gaagcaaagg	ataatttctt	cgaagtgttt	accccagtgt	600
40	ttgaaaggaa	ttccagatgg	tcaaataaaa	aaaatgttcc	taaacttggt	gatatgaatt	660
	catcatttga	agatgtagat	atattttatt	ctttctggta	taattttgat	tcttggagag	720
45	aattttctta	tttagatgaa	gaagaaaaag	aaaaagcaga	atgtcgtgat	gagaggagat	780
45	ggattgaaaa	gcagaacgga	gcaacaagag	cacaaagaaa	aaaagaagaa	atgaacagaa	840
	taagaacatt	agttgacaat	gcatacagct	gtgatccaag	gataaaaaag	ttcaaggaag	900
50	aagaaaaagc	caagaaagaa	gcagaaaaga	aagcaaaagc	agaagctaaa	cggaaggagc	960
	aagaagctaa	agaaaaacaa	agacaagctg	aattagaagc	tgctcggtta	gctaaggaga	1020
55	aagaagagga	ggaagtcaga	cagcaagcat	tgctggcaaa	gaaggaaaaa	gatatccaga	1080
ככ							

aaaaagccat taagaaggaa aggcaaaaac ttcgaaactc atgcaagata gaagaaataa

atgagcaaat cagaaaagag aaagaggaag ctgaggctcg tatgcgacaa gcatctaaga 1200 acacagagaa atcaactggt ggaggtggaa atggaagtaa aaattggtca gaagatgatc 1260 tacaattact aattaaagct gtgaatctgt tccctgctag aacaaattca agatgggaag 1320 5 1380 ttattgctaa ttacatgaac atacattctt cctctggagt caaaagaact gccaaagatg ttattggcaa agcaaagagt ctccaaaaac ttgaccctca tcaaaaagat gacataaata 1440 10 aaaaggcatt tgataagttc aaaaaagaac atggagtggt acctcaagca gacaacgcaa 1500 1560 cgccttcaga acgatttgaa ggtccatata cagacttcac cccttggaca acagaagaac 1620 agaagctttt ggaacaagct ttgaaaacat acccagtaaa tacacctgaa agatgggaaa 15 1680 aaatagcaga agcggtgcct ggcaggacaa agaaggactg catgaaacga tacaaggaac ttgtcgagat ggtaaaagca aagaaagctg ctcaagaaca agtgctgaat gcaagtagag 1740 20 ccaagaaatg acaatctttg ttgtgtgtgc atttttataa taaaactgaa aatactgtaa 1800 1860 25 9 <210> <211> 2291 30 <212> DNA <213> Homo sapiens 35 <400> gaatteetga etgeeacagg tgtacaggaa acatttgtet tttgttgetg gaaagetget 60 caaatcaaag aacatttact gaagtcaaag tggtgccgcc ctacatctct caatgtggtt 120 40 cgaataatta catcagagct ctatcgatca ctgggagatg tcctccgtga tgttgatgcc 180 aaggetttgg tgegetetga etttettetg gtgtatgggg atgteatete aaacateaat 240 atcaccagag cccttgagga acacaggttg agacggaagc tagaaaaaaa tgtttctgtg 300 45 360 atgacgatga tetteaagga gteateceee ageeaceeaa etegttgeea egaagaeaat 420 gtggtagtgg ctgtggatag taccacaaac agggttctcc attttcagaa gacccagggt 50 480 ctccggcgtt ttgcatttcc tctgagcctg tttcagggca gtagtgatgg agtggaggtt cgatatgatt tactggattg tcatatcagc atctgttctc ctcaggtggc acaactcttt 540 acagacaact ttgactacca aactcgagat gactttgtgc gaggtctctt agtgaatgag 600 55 gagatcctag ggaaccagat ccacatgcac gtaacagcta aggaatatgg tgcccgtgtc 660

	tccaacctac	acatgtactc	agctgtctgt	gctgacgtca	tccgccgatg	ggtctaccct	720
5	ctcaccccag	aggcgaactt	cactgacagc	accacccaga	gctgcactca	ttcccggcac	780
J	aacatctacc	gagggcctga	ggtcagcctg	ggccatggca	gcatcctaga	ggaaaatgtg	840
	ctcctgggct	ctggcactgt	cattggcagc	aattgcttta	tcaccaacag	tgtcattggc	900
10	cccggctgcc	acattggtga	taacgtggtg	ctggaccaga	cctacctgtg	gcagggtgtt	960
	cgagtggcgg	ctggagcaca	gatccatcag	tctctgcttt	gtgacaatgc	tgaggtcaag	1020
15	gaacgagtga	cactgaaacc	acgctctgtc	ctcacttccc	aggtggtcgt	gggcccaaat	1080
13	atcacgctgc	ctgagggctc	ggtgatctct	ttgcaccctc	cagatgcaga	ggaagatgaa	1140
	gatgatggcg	agttcagtga	tgattctggg	gctgaccaag	aaaaggacaa	agtgaagatg	1200
20	aaaggttaca	atccagcaga	agtaggagct	gctggcaagg	gctacctctg	gaaagctgca	1260
1	ggcatgaaca	tggaggaaga	ggaggaactg	cagcagaatc	tgtggggact	caagatcaac	1320
ノ 25	atggaagaag	agagtgaaag	tgaaagtgag	caaagtatgg	attctgagga	gccggacagc	1380
23	cggggaggct	cccctcagat	ggatgacatc	aaagtgttcc	agaatgaagt	tttaggaaca	1440
	ctacagcggg	gcaaagagga	gaacatttct	tgtgacaatc	tcgtcctgga	aatcaactct	1500
30	ctcaagtatg	cctataacgt	aagtctaaag	gaggtgatgc	aggtactgag	ccacgtggtc	1560
	ctggagttcc	ccctgcaaca	gatggattcc	ccgcttgact	caagccgcta	ctgtgccctg	1620
35	ctgcttcctc	tgctaaaggc	ctggagccct	gtttttagga	actacataaa	gegegeagee	1680
33	gaccatttgg	aagcgttagc	agecattgag	gacttcttcc	tagagcatga	agctcttggt	1740
	atttccatgg	ccaaggtact	gatggctttc	taccagctgg	agatcctggc	tgaggaaaca	1800
40	attctgagct	ggttcagcca	aagagataca	actgacaagg	gccagcagtt	gcgcaagaat	1860
	caacagctgc	agaggttcat	ccagtggcta	aaagaggcag	aagaggagtc	atctgaagat	1920
45	gactgaagtc	acactgcctg	ctcctttggg	tgtgattgag	tgccctcctg	gctcctgggc	1980
	tgggacaagt	gaggaactag	ctgcagaggg	atgagtgacc	accatccagg	ctgagactga	2040
	aaggagcaga	ggctggaact	acagtattct	ttcccctgct	agcaaccatg	tgcctcccat	2100
50	cctgactgtg	gagttgggat	gtggaagtgg	ggctggaaca	aagcttctgc	ctagggagga	2160
	gctaagcagg	cccggcagtt	ggaggaaggc	cagaggaaca	gctttgtgct	ccggctttcc	2220
55	ctcagggaac	agcagagagc	agttggctct	ttctgctgct	tgtatatgtt	aatattaaaa	2280
	gagagtggtg	t					2291

<210> 10 <211> 1580 <212> DNA <213> Homo sapiens

10

5

<400> 10 60 atococtocg gttttcctca gtctccacgt acgtccctca aagcgcgtcc taaaacccgg 15 ataaccggag cgctccccat ggaccacacg gagggcttgc ccgcggagga gccgcctgcg 120 catgctccat cgcctgggaa atttggtgag cggcctccac ctaaacgact tactagggaa 180 gctatgcgaa attatttaaa agagcgaggg gatcaaacag tacttattct tcatgcaaaa 240 300 gttgcacaga agtcatatgg aaatgaaaaa aggttttttt gcccacctcc ttgtgtatat 360 cttatgggca gcggatggaa gaaaaaaaa gaacaaatgg aacgcgatgg ttgttctgaa 420 25 caagagtctc aaccgtgtgc atttattggg ataggaaata gtgaccaaga aatgcagcag 480 ctaaacttgg aaggaaagaa ctattgcaca gccaaaacat tgtatatatc tgactcagac 540 aagcgaaagc acttcatttt ttctgtaaag atgttctatg gcaacagtga tgacattggt 30 600 gtgttcctca gcaagcggat aaaagtcatc tccaaacctt ccaaaaagaa gcagtcattg 660 aaaaatgctg acttatgcat tgcctcagga acaaaggtgg ctctgtttaa tcgactacga 720 35 tcccagacag ttagtaccag atacttgcat gtagaaggag gtaattttca tgccagttca 780 cagcagtggg gagccttttt tattcatctc ttggatgatg atgaatcaga aggagaagaa 840 ttcacagtcc gagatgtcta catccattat ggacaaacat gcaaacttgt gtgctcagtt 40 900 actggcatgg cactcccaag attgataatt atgaaagttg ataagcatac cgcattattg gatgcagatg atcctgtgtc acaactccat aaatgtgcat tttaccttaa ggatacagaa 960 1020 45 agaatgtatt tgtgcctttc tcaagaaaga ataattcaat ttcaggccac tccatgtcca 1080 aaagaaccaa ataaagagat gataaatgat ggcgcttcct ggacaatcat tagcacagat aaggcagagt atacatttta tgagggaatg ggccctgtcc ttgccccagt cactcctgtg 1140 50 cctgtggtag agagccttca gttgaatggc ggtggggacg tagcaatgct tgaacttaca 1200 ggacagaatt tcactccaaa tttacgagtg tggtttgggg atgtagaagc tgaaactatg 1260 1320 55 tacaggtgtg gagagagtat gctctgtgtc gtcccagaca tttctgcatt ccgagaaggt 1380 tggagatggg tccggcaacc agtccaggtt ccagtaactt tggtccgaaa tgatggaatc

atttattcca ccagccttac ctttacctac acaccagaac cagggccacg gccacattgc 1440 agtgtagcag gagcaatcct tccagccaat tcaagccagg tgccccctaa cgaatcaaac 1500 5 acaaacagcg agggaagtta cacaaacgcc agcacaaatt caaccagtgt cacatcatct 1560 acagccacag tggtatccta 1580 10 <210> 11 <211> 2509 15 <212> DNA <213> Homo sapiens 20 <400> 11 tggccggggg atggggcgcc ggtctgcctt gacagggttg caaagttgtt ttctaaattc 60 cgaagcgccc ctctgccccc tccccccaat ctgcttgcgt cgggggtggg gggtggggg 120 25 gtcacctcct caggtttcgt tctttcaaac tttttgaaac cctaattggt ggcctctgag 180 tgggcctcgt ggactcccgc ctcctaagta actcttacca cgtcactagg ccaaagaggg 240 gcgtggggtg aacgaaaggg ctcccgaact tttttttttc cagccaggcc gaacgggggc 300 teggtaatga ttggecaggg egeateactg egaacetgte aateaegggt ceteegggtt 360 gcgaggggcg gaccaagccc caaccccggg gaatccgagc aggtatataa ggggcccagc 420 tagagcccag gcagactgtg aatgcgacct gttcgagaga actcatcagg tgcgagaagc 480

30 35 ccgcgggttc ctgctgattt ggcgcggagc attttgataa gcctaccctt cccgccggac 540 40 tegetggeec acaggeece aageteeget eegacggagt eecagggeet titeaeegtg 600 660 geogetecag eccegggage geetteteet eccgceaege tggegeaect tetteeegee 720 ccggcaatgt acagecttet ggagactgaa etcaagaace eegtagggae acceacaca 45 780 geggeggca eeggeggee egeageeeg ggaggegeag geaagagtag tgegaaegea 840 gccggcggcg cgaactcggg cggcggcagc agcggtggtg cgagcggagg tggcgggggt 50 acagaccagg accgtgtgaa acggcccatg aacgccttca tggtatggtc ccgcgggcag 900 960 cggcgcaaaa tggccctgga gaaccccaag atgcacaatt ctgagatcag caagcgcttg 1020 ggegeegact ggaaactgct gaccgaegee gagaagegac cattcatega cgaggeeaag 55

cgacttcgcg ccgtgcacat gaaggagtat ccggactaca agtaccgacc gcgccgcaag

	accaagacgc	tgctcaagaa	agataagtac	tccctgccca	gcggcctcct	gcctcccggt	1140
	gccgcggccg	ccgccgccgc	tgccgcggcc	gcagccgctg	ccgccagcag	tccggtgggc	1200
5	gtgggccagc	gcctggacac	gtacacgcac	gtgaacggct	gggccaacgg	cgcgtactcg	1260
	ctggtgcagg	agcagctggg	ctacgcgcag	cccccgagca	tgagcagccc	gccgccgccg	1320
10	cccgcgctgc	accgctacga	catggccggc	ctgcagtaca	gcccaatgat	gccgcccggc	1380
10	gctcagagct	acatgaacgt	cgctgccgcg	gccgccgccg	cctcgggcta	cgggggcatg	1440
	gegeeeteag	ccacagcagc	cgcggccgcc	gcctacgggc	agcagcccgc	caccgccgcg	1500
15	gccgcagctg	cggccgcagc	cgccatgagc	ctgggcccca	tgggctcggt	agtgaagtct	1560
	gagcccagct	cgccgccgcc	cgccatcgca	tcgcactctc	agcgcgcgtg	cctcggcgac	1620
20	ctgcgcgaca	tgatcagcat	gtacctgcca	cccggcgggg	acgcggccga	cgccgcctct	1680
]	ccgctgcccg	gcggtcgcct	gcacggcgtg	caccagcact	accagggcgc	cgggactgca	1740
)	gtcaacggaa	cggtgccgct	gacccacatc	tgagcaccgg	cctgcgctcg	tccacccttg	1800
25	ttccccaccc	ccacccccac	tecegeeeeg	cacccccaag	ttgggtcgcc	ttgtttagct	1860
	ttgcttgcct	gggactgttg	ccttgtaccg	atgatgggga	gggctgaaag	ttttgctgta	1920
30	gctgtcgggt	tttgtacaaa	agtcaaaaat	aagtcaggag	cagcgaaaat	gggatcttct	1980
50	agagagctct	cttgccccac	gccgctgctc	ctttcacctt	tgtaggctgg	gaatcgctgt	2040
	gttatttgca	aagaaaaaac	agcccccact	cctcctcctg	agttccaggg	ttattctgtt	2100
35	acatttgaaa	atgttgtctt	gttagtttgc	agttagccaa	ggagtgaatg	ggagaaacat	2160
	agtatcgggt	gaggtccagc	tggagaactg	caacgcctac	gcccccagtc	gtgtcgcgtc	2220
40	tgttttcctc	gaggttttt	ggggcgctga	ccgctccaag	cagcgcggca	gctaaagcca	2280
	atgttaattt	atagccaggt	gtgcgtgtgt	ctcccgcctc	gccgcccctg	gccgcgggac	2340
	agcttctgtc	caatcatgtt	gagttggtga	tttctgccgt	gatctgtttg	atatttcttc	2400
45	gcgctaatgt	gttcagattt	cgtttgggta	gtggggaggg	gctactttgt	ttcagggttt	2460
	tcaagctttt	actcttaatt	cctaaatgag	atcaataaat	tttataacc		2509

50 <210> 12

55

<211> 8372

<212> DNA

<213> Homo sapiens

```
<220>
 5
    <221> Unsure
    <222> (2677)..(2677)
    <223> n = a, c, t or g
10
15
    <220>
    <221> Unsure
    <222>
           (5121)..(5121)
    <223> n = a, c, t or g
    <220>
    <221> Unsure
30
    <222> (5117)..(5117)
    <223> n = a, c, t or g
35
    <220>
40
    <221> Unsure
    <222> (5116)..(5116)
45
    <223> n = a, c, t or g
50
    <400> 12
                                                                           60
    aagettggtg ccatctattt tggactatgc cttgcataca getttatggg aacatttgtc
    aggcaaaagt ataataatgg caaactctac gccttttatt ttaaattaga ttggtgtgat
                                                                          120
55
                                                                          180
    ttgatgctga cgggagtgag agtaatggcc ttatcctgct gcaggctgtg ctgaggatgg
```

240 cctggtctgc caccctcctc gagtagcatt ttgcatgtgt aacagggtct cccctctggg 300 gcacaacaac aaagagaagt tgctaaggac aagaagcagg tgcggaaatg catctcccat 5 360 tggaacagcc ctgggcttac tccaatggct gagagaggtg ctatggccag tcctcccaga 420 gctctgcagc tgcacttggg ggtggacagt ctcgtgcttg tcctgcgtga taacggccgt gaaagccagc caactgctgc ccaaaatcac ccagccgatt gggggtttcc catcggcgca 480 540 ccctgcccgg agccaagaag acaggctggt gctgctgtat ttgtatttat atccattgct 600 gegetetgeg ttetegtgge acgeetggae acteeteege etececetee tetteeteet 15 660 ccagggccac ctccccgcct tccccaccc catctgcttc tgtcaaatga gaaagtcacc 720 gaggagaacc caaacactcc agccgctgag agcccccttt ggcacttggc agcacgcggc 780 ggcgggctcc tcggctcaac ttcgaggagt ctccgcgacg caacttttgg ggacgctttg 840 catttaagag agaacgaccg aggaggagga gcgctctgcc cggccgccgc tacctgcggg 900 gageteacea geaaaegeea etgeagaega aggaeecaaa gaaegtaaag ggeaaaetge 960 cgccgcgggg agggggcacc gccgagaagt tagagtgtcc cagagacaac ctgctcgagc 1020 gctcggccgg agacactaag gcggcccggg gcgcggcgtg gccctggctg gtcccccagc 1080 30 1140 ctccgcgggc agccaacatt gatttcctcc gggccgaggg cgagggcccg ggcggcgg ggctgcagcc gcggcagggc gagagcatgt ccaagccggt ggaccacgtc aagcggccca 1200 35 1260 tgaacgcctt catggtgtgg tcgcgggctc agcggcgcaa gatggcccag gagaacccca agatgcacaa ctcggagatc agcaagcgct tgggcgccga gtggaaactg ctcacagagt 1320 1380 cggagaagcg gccgttcatc gacgaggcca agcgtctacg cgccatgcac atgaaggagc accccgacta caagtaccgg ccgcggcgca agcccaagac gctcctcaag aaggacaagt 1440 tegeetteee ggtgeeetae ggeetgggeg gegtggegga egeegageae eetgegetea 1500 45 aggcgggcgc cgggctgcac gcgggggcgg gcggcgcct ggtgcctgag tcgctgctcg 1560 ccaatcccga gaaggcggcc gcggccgccg ccgctgccgc cgcacgcgtc ttcttcccgc 1620 agteggeege tgeegeege getgeegeeg eegeegeege egegggeage eeetaetege 1680 50 tgctcgacct gggctccaaa atggcagaga tctcgtcgtc ctcgtccggc ctcccgtacg 1740 cgtcgtcgct gggctacccg accgcggcg cgggcgcctt ccacggcgcg gcggcggcg 1800 55 1860 ctgcagcggc ggccgccgcc gccggggggc acacgcactc gcaccccagc ccgggcaacc 1920 egggetacat gatecegtge aactgeageg egtggeeeag eeeegggetg eageegeege

10

20

25

1980 tegectacat cetgetgeeg ggeatgggea ageceeaget ggaeceetae eeegeggeet 2040 acgctgccgc gctatgaccc cgcggggccg cctcgcgagg accggtgtgc acacgtgtac 5 2100 atatgtatag gtacgagcgc tgcggcctcc ccgtgcgccc tcccgcgacc gggggcccgg 2160 tttgtatgta catagaatgt ataggtgcca ggtagaggca gagaggccag gcggggcagg 10 2220 agtggccaag cgcgcaaggg cgcgggcgag caggcctgtg aattcgcagg atcatttcag 2280 accegeactt eggeageeaa etegaaagea ggeggttgtg tgeggeagea gttggegttt 2340 gctttgcact tcggaacctg ttgcgttttg acccacggag gtggaggagt aactttttga 15 2400 2460 tettetteet egeceeteag ecceecaace eecaaceece teeeggteeg tgttgeatge acgctgttca aatgtgaggt ctgaaatggc tggcacacgg gaaaagctgc ttgtgtcatt 2520 2580 cgtttctggg agtgggatgg ctctgagcag cctcgcctcc ctgtttgtac tatttgaact 2640 ttgcagatet etgttetete aageagaact eecaaceaga tecattettg aceagtgace 2700 ggctcgaatc tggccttttg tgtgagatga tcacggnttc ttttgtttat cacgccattt gcaaatcaga gcaagagctc tttctcaagg gcaagaaacg caaacaagaa atatttgtga 2760 30 2820 gatgaaagtt gtcaattgga ttttcttcct aaacaacaa caacaacaa ctactagaag 2880 tctccctgag tccactcgct tggatttctg acacagttta caaaaaagga aaaaggcact 2940 gctcctattt tcccttatgg ctgagttcac cttaagattg taaatgtgta tatgtcagtg 35 3000 aaaacattga ggcttggaaa atgtgttatt ttcgttgccc taagtttgag tcgactttag 3060 actcaaaaac attttgagcg aatatcaaag ttaactttta aaaattgcga aactatttca 40 3120 gaatcgcaat tttatcgaag attaaatcag acttttttgt ctggtaatta tatatttatt 3180 atttagcaaa actgaagaaa aaaagcacag aattgtttca acagatgtct ctcattttca 3240 gctagcattt ctctcccaag ttgagctggt ttaatgtgtt ttggatttcc ctcctcaatt 45 ggcttatttt ttagatcacc tgcaattcat ttgcaaattg caataaaaca cattttagaa 3300 3360 aaaaggaacc ttcaattatt agctttgttt ctttttaaat gtatatattt tgactaatgt 50 3420 ttgtgaatga agttggctaa catgtattta gtttcatttt ggctttatgt aatataaagt 3480 ttttaaaatt ttaaatatgg ttttaacctt tatgtgtaaa tgattttcta gtgtgacctt 3540 ctaatttaat attagacgtc taaggtatat ctgtaaatta gaatccgact atcactctgt 55 tcatttttt tgaacaaaga gtttaaataa agcctgaacc agggaaaaga aaaatcttct 3600

3660 attictigtt gagttcctaa caagattitt atctgaattg cccttacgtg cctggtccag 3720 gtgaagtgta aggtatcctc caaaggcacc ctttgtttca cttttgaata gatttactag 5 3780 gaaatctaaa tcaagccatt gttattcaga gccaaaaacc tgatttatca catttttaat cgtgaatagg aaagaagatt tttaaaaagc ccaagtcgtt gtattagctt taacaacaac 3840 aaaaaaaagg cattcatgaa ccagtagaac agagcccatt gaaaacatcc agacctttca 3900 10 3960 aagcatttca ccagtttcta gtaacatttt aagaggggaa agttgcttga ccactttatc ttgttagttg aagagcccca ccacttaaat cagtgtaatt tgttctccta tctttggggt 4020 15 4080 attecttgtt gacacettaa ggttttattt ggaaggataa teactactaa egacaaagta caaattttgg cctctttagg acttaatttt gttatgctaa tcgcattaaa gtagaagtat 4140 4200 aacattcaaa tggagagggt tggatttcta gggctagaca aattgctact aaagtttgaa 20 4260 aaatcataaa ggattttaat tttagacaag aaatagaaga ctgtcagaaa aaaaaaaata ggaagatete geeeceege aaccaaaatg gaaattetea agataetata tacaagtett 4320 25 aaaccagttt ccccattgag accatctctg gagetgcacg tetttataaa cgacccaagt 4380 ctttaaagtc attgttttcc cccaacggaa taatatttta aaaaccatga aaagttttgg 4440 4500 aaatgtgaga aataggetet getggtttga eeetgattea etaattaaaa tgateeetet 30 4560 cetgttattc cetgagetet ttgcaatatt ataagttaat teatatggtt etgagegatt atgcaaaact aatttggact gtccaggggt aattatccct gacacggtta attaaatcct 4620 35 ttcaaggett egtettteee ttttgtagea geceateeet teteaacaeg gaacttetge 4680 4740 ggctcgctgg aaatcacccc agccctaaat cttagttacc accctgagcc ttccagctcg 4800 geogeeteet eggeetgaag acteeeegee teeteeegee eesteeett tteeeaaaga 40 4860 tcagcgtttt ctgggagaaa cgctccggag ttgttgatga atgagaagag gactggaaag 4920 atgggtaaga ggaggggtga ggatgccgag ggggagcacc gaggtcatat cgccaacaga 45 ttgtgcggct gtttgaggac ctccacaggc cccacagact cgtttatcac ccattctgac 4980 tccaatggtc ttgctaacaa gttggcgggt tttgcgcctg cagagagcct cctgccaagt 5040 5100 tagactgtgc agaagtaagg ggttggagcg gggggagcgg ctccggggca agagggcgta 50 5160 gagaaaggcc cggggnnggg nggtgtaagc gtctgaaagt ggcccacaaa tgcagcgctg 5220 tgattgggca gagagetget getggetege gatetetate tecatetett tatetatete 55 5280 tetttettet tteeetteet tttattette tattttegtt tetttteaag gtttttttta 5340

10

15

20

25

30

35

40

45

50

55

5400 aagccatgat gcaatttctt tggtattcac cgttgtccca aaacttgaag caagcctcgt 5460 atccaagggg ccaggcatgt tgcttcgggc tttgtgcaaa caggtggaat tgcgctgtgt aagcagtaag aactggtgct ggggagctgt cgcgcgaggg ggtggctttg ggagagcagg 5520 5580 gttgctggcc gcgattgtta cttcccttga caatttcctc ctccccctcc cccaagaaga 5640 taggagaaag caccgcggat ctccctctca ccccaggctc ggggcgcaga agatggagag 5700 aagattccac tctccccgga gcagataggg acggtcgcgc cagccaatca gagcgcggct 5760 cggcgccggc gctcccggcc gcctgggccg ccgtgtcctc caggcaagcg aagttcccgc aactcgtccg cctcgagggt ccgcgtcttt cttgcgcccg cggcccagcg gaggccgagg 5820 gagecgteca aactttatta ateteteete etttettet eeeteageee agtgeatete 5880 5940 aaaggtcagc cctcttcttt taaaagactg atattattaa tgcactgaca attcctcccc 6000 cccttttctt ttttctctct tgcagggggg aaaaaaaggg aaatggtgaa aagagctttt 6060 tttatccttt ttttttttt gtccttcagt gggagcgttt agacagtcga ggaggttttg 6120 tccgagaaca aaacgcaggg ttgggaggtt ttgtgagagt gttgtttgtt gaagtggagc taagaaaaag cggcggcttt ctcctcattg tgaagaaacc aatcagtggt atttggaaaa 6180 ctgttagcat tgtgcacttc ttctgtgtcc attgtgaggc gtttcttttc acaaggtttt 6240 6300 tttttcagcc gatccagctg gccggaatga atagcggtgc aatgtgtaca cgctttgtcc 6360 ctccggcctt caagtagccc ccattgaata gactaagttg acctgcgtga cagtgaaaca 6420 acataataaa aaatacatga gcccctgaat aggagcaggc gcataaataa ataaaatggg 6480 tgaccaaaac tggataaact gaatgacaaa acggtgaaag gggaacaaaa agatatttaa 6540 cacgctagat tagcattaga atgcgatcta caaggcagaa caattgatga ataggtttac 6600 cggccaagaa agaaatggac taaatgccct ttgaatagat atgctttttg caagggcttt gaatagatat gcttttgcaa gggctgaatg ggaaaaggta aagatgaagc tatgcaaatg 6660 6720 agccggggaa ctttttatat atattcttta aacacacaca cacactgcgg ggggaagagt 6780 gctgcctcgg gatgtttata gaagcaataa ttgccattat tagcattgtc tgcggcagat agaaattgaa caggttggga taatataggg tagcagtaat tattcttcta attaatggtc 6840 ctttgctact tgaaaaaaga aaaaaggaaa gaagtagtaa aagttatgca gaagttatgt 6900 6960 ttccttgtgt ccatttgccc agcgctggaa tctgtggagc aggaagcctg gcaattccaa gatacgcgat gatcytcaaa cattcccggg agccagtcct gaggctctgg cttcagggcc 7020

```
7080
tagtttccat ttatgccgcg tttttgagag tctaatactg tgtctggcac atggtaggtg
                                                                     7140
ctcactgaat agtcgtggta tgaatgaatg aacgaatgaa tgaatgaatg aatgaatata
                                                                     7200
agtttaatgg gggaaacccg ggcctcctaa taaaggtagg ggctgggggga tacctagggg
                                                                     7260
cttccccagg aggatttctt ttttcatcat cccacccctg ggagaaaggt ccacgcagga
                                                                     7320
tggtcgcttc ccccttgctg agagttttgc cttcagccta tctgggccgc tggaaaagag
gagaagaata aacaagagac aagcaactac tcccctaccg gcgttccgtc cttgtcctca
                                                                     7380
ctgccaaatc cactccaaag ccgaggatgg tgagactgtg aagttgcaaa gaaacacaga
                                                                     7440
gcccaccccc ttaaagaatt acgatatatt taaagtttgc ctctttcagg tttctctcct
                                                                     7500
                                                                     7560
tggctcctgc ccctttcccc tcccggctcc ttgtccttga ctgaacctca tgggacagag
                                                                     7620
aacctcctgt ccccacgag gcaaggcgcg aacccgcaga gatctggggt gccctttggt
                                                                     7680
tecetgeget geeetggagg egteeataga ggeetttgee geeaaggaca geaattgttt
                                                                     7740
tattttcgat ggttgctcgc caggctgcgg gtcgcgggcc cacccagccg tcgaactttc
                                                                     7800
cagtcgttat cagcgctgct cctaacttaa tggaataatg caaattatag cctgcccagc
                                                                     7860
tgacacgtcc ctgcgaatgc gccggggctg agctctggcc agccgctctc tcgacgtcct
                                                                     7920
ggacggccgg agggaatgaa gctctgaatt gtgacaaaag tggggggggc accccaaatt
                                                                     7980
ctcaaagcaa tgttctttt tttttctttt ttcttaagca attgagcctt accaaatgtc
                                                                     8040
ggggccggcc gcacggaagc cttgcatatt ttaaagtgta acctgagcct tcgcggtttc
                                                                     8100
agcttcactt aaaacatgca aattcttgaa attgaaaaaat ctgaaaaact tccgaagagt
tctatctgaa taaatccaaa tccattggga gtcgctttga ggagacaaaa cgcacagcga
                                                                     8160
tttggggtga gggatatttg tggggaggca ggacgtgctg gattgggttt ccagggtcaa
                                                                     8220
                                                                     8280
ggtgtctctg ggccttcgac gatagcctta gcgcagagca gggaagtggc accgctaggc
                                                                     8340
agcaagetea gttgetetae ttttgtgace catecececa eccececeae egecaecett
                                                                     8372
qcctccgggc cactgcccct ctctgcaagc tt
```

<210> 13

50 <211> 4877

> <212> DNA

<213> Homo sapiens

55

10

15

20

25

30

35

40

10

15

20

30

35

40

45

50

55

<400> 13 60 gcccgaaacc cggaagtgag cggcggcagc tgcgaggctc ggagaaacag gcgccgcggg ctccgcgccc ggccggaccc gggcccgaga tcatgatgct gccgccaccg ccgccaccac 120 ggagcgagaa gcccagatag acgccccggc ggccccgggt cctggagtcc cgccgcctgc 180 240 tgcccggccg aggaccccac cccgcctgcc gcccgatgct tgcagtgggg cccgccatgg 300 acagggatta eccgcagcat gaaccecege eggegggeag ecteetgtae ageeegeege 360 ccctgcagag cgccatgctg cactgcccct actggaacac cttctcgctg ccgccatacc ctgccttctc cagcgacagc cgcccgttca tgagctccgc ctccttcctc ggcagccagc 420 cctgcccaga caccagctat gcccccgtgg ccaccgcctc cagcttgcca ccaaagacct 480 540 gcgactttgc tcaggactcc tcctattttg aggacttctc caacatctcc atcttctcct cgtccgtgga ctccctgtcg gacatcgtgg acacgcccga cttcctgccg gctgacagcc 600 660 tcaaccaggt gtccaccatc tgggacgata accctgcccc ctccacccac gataagctgt tccagctcag caggccgttt gcaggcttcg aggactttct gccctcccac agcaccccgc 720 780 ttctcgtcag ctaccaggag cagagtgtgc agagccagcc agaggaggag gacgaggctg 840 aggaggagga ggcggaggag ctggggcaca cagagaccta cgccgactac gtgccgtcca 900 agtecaagat egggaageag cacecagace gegtggtgga gaceageaca etgtecageg 960 toccaccoc agacatcace tacaccotgg coetgecete ggacageggg geeetgtetg 1020 ccctgcagct agaggccatc acctacgcct gccagcaaca cgaggtcctg ctccccagcg 1080 ggcagcgcgc gggctttctc atcggcgatg gggccggcgt gggcaaaggc cggacggtgg 1140 ccggagtcat cctggagaac cacctgcgcg gccggaagaa agcattgtgg ttcagcgtct ccaacgacct caagtacgat gcggagcgcg acctgcggga catcgaagcc acgggcatcg 1200 cggtgcacgc gctcagcaag atcaagtacg gtgacaccac tacctcagag ggcgtcctct 1260 tegecaceta eteegeeetg attggggaga geeaggeegg tggeeageae egeactegee 1320 1380 tccggcagat cctggactgg tgtggggagg cctttgaggg cgtcatcgtg ttcgacgagt gtcacaaagc caagaatgcc ggctccacca agatgggcaa ggccgtgcta gacctgcaga 1440 acaagctgcc cctggcccgc gtggtctacg ccagcgccac aggtgcctct gagcctcgga 1500 1560 acatgateta catgageege ttgggtatet ggggegaggg cacaccette eggaactttg 1620 aggagtteet geacgeeate gagaagaggg gegttggege catggagate gtggeeatgg acatgaaggt cagcggcatg tacatcgcac gccagctcag cttctccggc gtcaccttcc 1680

10

15

20

25

30

35

40

45

50

55

gcatcgagga gatcccgctg gccccagcct tcgagtgcgt ctacaaccgc gcagccctgc 1740 tgtgggccga ggccctgaac gtgttccagc aggcggccga ctggatcggc ctggagtcgc 1800 1860 gcaagtccct gtggggccag ttctggtcgg cacaccagcg cttcttcaag tatctgtgca 1920 tegeageeaa ggtgegeegg etggtggage tggeeegaga ggagetggeg egagaeaagt 1980 gcgtggtcat cgggctgcag tccacgggcg aggcgcgcac gcgggaggtg ctgggggaga 2040 acgatgggca cctcaactgc ttcgtctcgg ccgctgaagg cgtgttcctg tcgctaattc agaagcactt teegteeace aagagaaage gggacagagg agegggeage aageggaaac 2100 2160 ggcgacctcg gggacgcggg gccaaagccc cccggctggc gtgcgagaca gcgggcgtca 2220 teegeateag tgaegaeage ageaeggagt eggaeeetgg eetggaeage gaetteaaet 2280 cctcccccga gtccctggtg gatgacgacg ttgtcatcgt tgatgcagtc gggctcccca 2340 gtgacgaccg gggatccctg tgcctcctgc agagagaccc gcatggcccc ggggtcctgg 2400 agcgggtgga gcggctgaag caggatctgc tggacaaagt gcgccggctg ggccgggaac 2460 tgccagtcaa caccetggae gagetcateg accagetggg eggeeeceag egggtggegg agatgaccgg caggaaaggc cgcgtggtgt ccaggcccga cgggacggtg gccttcgagt 2520 2580 cgcgggcaga gcagggtctg tccatcgacc acgtgaacct cagggagaag cagcgcttca 2640 tgagcggcga gaagctcgtg gccatcatct cggaggcctc cagctcgggt gtctccctcc 2700 aagccgaccg ccgtgtccag aaccagcggc gccgcgtgca catgaccttg gagctgccgt 2760 ggagegeega eegegeeate cageagtteg geegeaceea eeggteeaae eaggteteeg 2820 egecagagta tgtetteete ateteggage tggeegggga gegeeggtte geetecateg 2880 tggccaagcg cctggagagt ctgggggccc tgacccacgg agaccgccgc gccacggagt 2940 cccgtgacct cagcaagtac aactttgaga acaagtatgg cacccgggcc ctgcactgtg 3000 tecteaceae cateetgage cagactgaga acaaagtgee tgtgeeceag ggataceetg gaggggtccc caccttcttc cgggacatga agcagggcct gctgtctgtg ggcattggtg 3060 3120 gccgggagtc ccggaatggc tgcctggacg tggagaagga ctgttccatc accaagttcc 3180 tgaaccgcat cctggggctg gaggtgcaca agcagaatgc cctgttccag tacttctcag 3240 acacettega ecaceteate gagatggaca agegggaggg caaataegae atgggeatee 3300 tggaccttgc tcccggtatc gaggagatct acgaggagag ccagcaggtg ttcctggctc ccgggcaccc gcaggacggg caggtggtct tctacaagat cagcgtggac cgcggcctga 3360 agtgggagga cgcctttgcc aagtcgctgg cgctgacggg cccctatgac ggcttctacc 3420

	tctcctacaa	ggtccgcggt	aacaagccca	gctgcctgct	ggcggagcag	aaccgcggcc	3480
5	agttcttcac	ggtgtacaag	cccaacatcg	gccggcagag	ccagctggag	gccctggaca	3540
J	gcctccgccg	caagttccac	cgggtcaccg	cggaggaggc	caaggagccc	tgggagagtg	3600
	gctacgcttt	gtcgctgacg	cactgcagcc	acagcgcctg	gaaccggcac	tgccggctgg	3660
10	cgcaggaggg	taaggactgc	ctgcaggggc	tgcggctgcg	gcaccactac	atgctgtgcg	3720
	gegegetget	gcgcgtgtgg	ggccgcatcg	ccgccgtcat	ggccgacgtc	agcagcagca	3780
15	gctacctgca	gatcgtgcgg	ctgaagacca	aggacaggaa	gaagcaagtg	ggcatcaaga	3840
13	teceegaggg	ctgcgtgcgc	cgggtgctgc	aggagctgcg	gctgatggat	gcggacgtga	3900
	agcgcaggca	ggcgcccgcc	ctgggctgcc	ccgccccgcc	cgccccgcgc	ccgctggcgc	3960
20	tgccttgcgg	ccccggagag	gtgctggacc	tcacctacag	cccccggcc	gaggccttcc	4020
)	cgccgccccc	gcacttctct	ttcccggcgc	cgctgtccct	ggacgccggc	cccggcgtcg	4080
25	tgccgctggg	cacccccgac	gcccaggccg	accctgcggc	cctcgcgcac	cagggctgcg	4140
	acatcaactt	caaggaggtg	ctggaggaca	tgctgcgctc	gctgcacgcg	gggccgccct	4200
	ccgagggcgc	gctgggggag	ggcgcggggg	cggggggcgc	ggcgggcggt	ggtcccgagc	4260
30	ggcagagcgt	gatccagttc	agcccaccct	tccccggcgc	ccaggctcct	ctctgacacg	4320
	cctttaggcg	aaacatgccc	caagacacag	ggaccgtttc	tcccctagga	gcagcggtgg	4380
35	ggagcagggc	caaggtcccc	tgaccactgc	tcagaggagc	cctaggccct	ggccgcagtg	4440
	ccttcagcgc	ccgacccggg	ccccacctg	gtcagccctg	gcggggccca	ctcaggacag	4500
	ctgggggccg	gggcgtggca	gggccctctc	tgtgcctctc	ctcctaagta	ggaaggggct	4560
40	ccgggtggct	gctctgggac	tgggcaccca	caagggctca	gtgggcccaa	acccttgaaa	4620
	tccgtgaaac	cgggtggtcc	caagagctag	aaactcagga	aaccccaggt	gctcagggcc	4680
45	ccgcgtctcg	ggggctccgt	ggggcagacc	cctgctaata	tatgcaattc	tccctcccc	4740
	agcccttccc	tgacccctaa	gttattgccc	gctcacctct	cccaggcccc	aggccgcgga	4800
	gctggcaggg	tggcgcctgc	ggtttctatg	tatttatagc	aagttctgat	gtacatatgt	4860
50	aaaggacttt	tttaaat					4877

<210> 14

55 <211> 1872

<212> DNA

<213> Homo sapiens

5							
	<400> 14 tcaggctgcc	tgatctgccc	agctttccag	ctttcctctg	gattccggcc	tctggtcatc	60
10	cctccccacc	ctctctccaa	ggccctctcc	tggtctccct	tcttctagaa	ccccttcctc	120
	cacctccctc	tctgcagaac	ttctccttta	cccccaccc	cccaccactg	cccctttcc	180
15	ttttctgacc	tccttttgga	gggctcagcg	ctgcccagac	cataggagag	atgtgggagg	240
13	ctcagttcct	gggcttgctg	tttctgcagc	cgctttgggt	ggctccagtg	aagcctctcc	300
	agccaggggc	tgaggtcccg	gtggtgtggg	cccaggaggg	ggctcctgcc	cagctcccct	360
20	gcagccccac	aatccccctc	caggatetea	gccttctgcg	aagagcaggg	gtcacttggc	420
	agcatcagcc	agacagtggc	cegecegetg	ccgcccccgg	ccatcccctg	gcccccggcc	480
25	ctcacccggc	ggcgccctcc	tcctgggggc	ccaggccccg	ccgctacacg	gtgctgagcg	540
23	tgggtcccgg	aggcctgcgc	agcgggaggc	tgcccctgca	gccccgcgtc	cagctggatg	600
	agcgcggccg	gcagcgcggg	gacttctcgc	tatggctgcg	cccagcccgg	cgcgcggacg	660
30	ccggcgagta	cegegeegeg	gtgcacctca	gggaccgcgc	cctctcctgc	cgcctccgtc	720
	tgcgcctggg	ccaggcctcg	atgactgcca	gcccccagg	atctctcaga	gcctccgact	780
35	gggtcatttt	gaactgctcc	ttcagccgcc	ctgaccgccc	agcctctgtg	cattggttcc	840
33	ggaaccgggg	ccagggccga	gtccctgtcc	gggagtcccc	ccatcaccac	ttagcggaaa	900
	gcttcctctt	cctgccccaa	gtcagcccca	tggactctgg	gccctggggc	tgcatcctca	960
40	cctacagaga	tggcttcaac	gtctccatca	tgtataacct	cactgttctg	ggtctggagc	1020
	ccccaactcc	cttgacagtg	tacgctggag	caggttccag	ggtggggctg	ccctgccgcc	1080
45	tgcctgctgg	tgtggggacc	cggtctttcc	tcactgccaa	gtggactcct	cctgggggag	1140
,,,	gccctgacct	cctggtgact	ggagacaatg	gcgactttac	ccttcgacta	gaggatgtga	1200
	gccaggccca	ggctgggacc	tacacctgcc	atatccatct	gcaggaacag	cagctcaatg	1260
50	ccactgtcac	attggcaatc	atcacagtga	ctcccaaatc	ctttgggtca	cctggatccc	1320
	tggggaagct	gctttgtgag	gtgactccag	tatctggaca	agaacgcttt	gtgtggagct	1380
55	ctctggacac	cccatcccag	aggagtttct	caggaccttg	gctggaggca	caggaggccc	1440
<i></i>	agctcctttc	ccagccttgg	caatgccagc	tgtaccaggg	ggagaggctt	cttggagcag	1500

	cagtgt	actt caca	gagctg	tctagcccag	gtgcccaacg	ctctgggaga	gccccaggtg	1560
	ccctcc	cage agge	cacctc	ctgctgtttc	tcacccttgg	tgtcctttct	ctgctccttt	1620
5	tggtga	ctgg agcc	tttggc	tttcaccttt	ggagaagaca	gtggcgacca	agacgatttt	1680
	ctgcct	aga gcaa	gggatt	caccctcgcc	aggctcagag	caagatagag	gagctggagc	1740
10	aagaac	egga geeg	gagccg	gagccggaac	cggagcccga	gcccgagccc	gagccggagc	1800
10	agctct	gacc tgga	gctgag	gcagccagca	gatctcagca	gcccagtcca	aataaacgtc	1860
	ctgtcta	agca gc						1872
15	<210>	15						
	<211>	1201						
20	<212>							
20		DNA						
	<213>	Homo sap	olens					
25								
	<220>							
	<221>	Unsure						
30	<222>	(697)(698)					
	<223>	n = a, c	, g or	t				
35								
	<220>							
40	<221>	Unsure						
	<222>	(715)((715)					
45	<223>	n = a, c	c, g or	t				
73								
50	<220>							
	<221>	Unsure						
55	<222>	(764)((764)					
<i>)</i>)	<223>	n = a, c	c, g or	t				

```
5 <220>
    <221> Unsure
    <222> (772)..(772)
10
    \langle 223 \rangle n = a, c, g or t
15
    <220>
    <221> Unsure
20
     <222> (782)..(782)
     <223> n = a, c, g or t
25
     <220>
30
     <221> Unsure
     <222> (835)..(835)
    \langle 223 \rangle n = a, c, g or t
35
40
     <220>
     <221> Unsure
    <222> (849)..(849)
45
     <223> n = a, c, g or t
 50
      <220>
```

55

<221> Unsure

```
<222> (880)..(880)
    <223> n = a, c, g or t
5
    <220>
10
    <221> Unsure
    <222> (886)..(886)
15
   \langle 223 \rangle n = a, c, g or t
20
     <220>
    <221> Unsure
   <222> (931)..(931)
25
     <223> n = a, c, g or t
30
     <220>
35 <221> Unsure
     <222> (935)..(935)
     \langle 223 \rangle n = a, c, g or t
40
45 <220>
     <221> Unsure
```

<222> (944)..(944)

<223> n = a, c, g or t

55

```
<220>
```

<221> Unsure

$$<223>$$
 n = a, c, g or t

10

<220>

15 <221> Unsure

 $\langle 223 \rangle$ n = a, c, g or t

20

25 <220>

<221> Unsure

<222> (976)..(976)

30 $\langle 223 \rangle$ n = a, c, g or t

35

<220>

<221> Unsure

40

<222> (983)..(983)

<223> n = a, c, g or t

45

<220>

50

<221> Unsure

<222> (988)..(988)

55 <223> n = a, c, g or t

```
5 <220>
    <221> Unsure
    <222> (1014)..(1014)
10
    <223> n = a, c, g or t
15
    <220>
    <221> Unsure
20
    <222> (1053)..(1054)
    <223> n = a, c, g or t
25
    <220>
30
     <221> Unsure
     <222> (1061)..(1061)
     <223> n = a, c, g or t
35
40
     <220>
     <221> Unsure
   <222> (1066)..(1066)
45
     <223> n = a, c, g or t
 50
     <220>
 55
    <221> Unsure
```

```
<222> (1076)..(1076)
    <223> n = a, c, g or t
5
    <220>
10
    <221> Unsure
    <222> (1093)..(1093)
15
    \langle 223 \rangle n = a, c, g or t
20
    <220>
    <221> Unsure
   <222> (1100)..(1100)
25
    <223> n = a, c, g or t
30
    <220>
35 <221> Unsure
    <222> (1104)..(1104)
     <223> n = a, c, g or t
40
45 <220>
     <221> Unsure
     <222> (1104)..(1104)
```

<223> n = a, c, g or t

55

<220>

<221> Unsure

5 <222> (1115)..(1115)

<223> n = a, c, g or t

10

<220>

15 <221> Unsure

<222> (1121)..(1121)

<223> n = a, c, g or t 20

25 <220>

<221> Unsure

<222> (1129)..(1129)

30 $\langle 223 \rangle$ n = a, c, g or t

35

<220>

<221> Unsure

<222> (1134)..(1135)

<223> n = a, c, g or t

45

50

40

<220>

<221> Unsure

<222> (1144)..(1144)

55 <223> n = a, c, g or t

```
5 <220>
    <221> Unsure
    <222> (1149)..(1149)
10
    <223> n = a, c, g or t
15
    <220>
    <221> Unsure
20
    <222> (1153)..(1153)
    <223> n = a, c, g or t
25
    <220>
30
    <221> Unsure
    <222> (1169)..(1169)
35
    <223> n = a, c, g or t
40
     <220>
     <221> Unsure
    <222> (1178)..(1178)
45
     <223> n = a, c, g or t
50
     <220>
55
    <221> Unsure
```

```
\langle 222 \rangle (1182)..(1182)
\langle 223 \rangle n = a, c, g or t
```

20

<400> 15 60 gagtctacgg cattgctgag gacgctgccc agggcatcgc taatgaggac gccgaccagg gcatcgctaa tgaggacacc acccagtgca tcgccaacga ggaagccgcc cagggcatcg 120 25 180 ccgaggacgc catccagggc atcgccaacg aggaggttgc ccagggcatc gccaatgggg tegecgeaca gggeategee aatgaggaeg ceacceaggg categeeaac tgggaegeeg 240 tccacggctt cgccaacggg gacgccgtcc tcagcttcgc caacggggac gccgcccagg 300 30 360 gcatcgccaa cggggacgcc accaagggca tgggcaacga ggtcaccatc cacggcatcg 420 ctaacgagga cgccgtccag ggcatcgcta acgaggtggc cgcccagggc atcgccaacg 35 480 aggacgccgc ccagggaatc gccgaggatg tcgcacaggg catcgccaac gaggacgccg 540 cccagggcat cgccaacaag gaggccgccc agggcatcgc caacgaggac gccgcccagg 600 gaatcgctga ggacgtcgca cagggcatcg ccaacgagga tgccgcccag ggcatcgcca 40 660 acgaggagge egeceaggge ategecaaca gggtegeege eeagggeate gecaatgaeg ccacccaggg catcgccgag gacaccgcca ggctttnnca acgacgaacg ccgtncaagg 720 45 780 cattggttaa cgaggacgcc gtcttgggca ttggccaacg aacnacgccg tncaaggcat 840 tngnttaatg aaaaatgga gttccaccgg tattcgaata accaaggaca cccgnccaag 900 ggcattggnc naactgggga cttccgtcca agggcctttn cccaangggg gacccccgcc 50 960 caagggccct cctttaatgg gggtcgnccg nccangggcc tttntttacn ggggaccccc 1020 tecaanggge attttntttt ttnggggnee eeceecaag gggtteeett tganggggaa 55 gtttttccac gggatttttt taaaaaggga ccnncttccc ngggcntttt ttttanaaag 1080

```
gacccattcc aantitttgn ttgnaaaggg acccnttcct ngggtttant aaanngggac
                                                                          1140
    cccncccang ggntttatta aattggaanc ccccccangg gntttttta ttnggacccc
                                                                          1200
                                                                          1201
5
    С
    <210>
           16
           748
10
    <211>
    <212>
           DNA
    <213>
           Homo sapiens
15
    <220>
20
    <221>
           Unsure
     <222>
            (697)..(698)
     <223>
           n = a, c, g or t
25
30
     <220>
     <221>
            Unsure
     <222>
            (715)..(715)
35
     <223>
            n = a, c, g or t
40
     <400> 16
                                                                             60
     gagtctacgg cattgctgag gacgctgccc agggcatcgc taatgaggac gccgaccagg
                                                                            120
     gcatcgctaa tgaggacacc acccagtgca tcgccaacga ggaagccgcc cagggcatcg
45
                                                                            180
     ccgaggacgc catccagggc atcgccaacg aggaggttgc ccagggcatc gccaatgggg
                                                                            240
     tegecgeaca gggcategee aatgaggaeg ceacecaggg categeeaac tgggaegeeg
50
                                                                            300
     tccacggett cgccaacggg gacgccgtcc tcagettcgc caacggggac gccgcccagg
                                                                            360
     gcatcgccaa cggggacgcc accaagggca tgggcaacga ggtcaccatc cacggcatcg
     ctaacgagga cgccgtccag ggcatcgcta acgaggtggc cgcccagggc atcgccaacg
                                                                            420
55
                                                                            480
     aggacgccgc ccagggaatc gccgaggatg tcgcacaggg catcgccaac gaggacgccg
```

```
cccagggcat cgccaacaag gaggccgccc agggcatcgc caacgaggac gccgcccagg
                                                                           540
    gaatcgctga ggacgtcgca cagggcatcg ccaacgagga tgccgcccag ggcatcgcca
                                                                           600
5
    acgaggaggc cgcccagggc atcgccaaca gggtcgccgc ccagggcatc gccaatgacg
                                                                           660
    ccacccaggg catcgccgag gacaccgcca ggctttnnca acgacgaacg ccgtncaagg
                                                                           720
                                                                           748
    cattggttaa cgaggacgcc gtcttggg
10
    <210>
          17
    <211> 1232
15
    <212>
           DNA
    <213> Homo sapiens
20
    <220>
25
    <221> Unsure
     <222> (214)..(214)
     <223> n = a, c, g or t
30
     <220>
35
     <221> Unsure
           (243)..(243)
     <222>
40
     <223> n = a, c, g or t
45
     <220>
     <221> Unsure
50
     <222> (269)..(269)
     \langle 223 \rangle n = a, c, g or t
```

```
<220>
5 <221> Unsure
    <222> (291)..(291)
    <223> n = a, c, g or t
10
15 <220>
    <221> Unsure
    <222> (294)..(294)
20
     <223> n = a, c, g or t
25
     <220>
     <221> Unsure
30
     <222> (317)..(317)
     \langle 223 \rangle n = a, c, g or t
35
     <220>
40
     <221> Unsure
     <222> (334)..(335)
45
   \langle 223 \rangle n = a, c, g or t
50
     <220>
     <221> Unsure
    <222> (341)..(341)
55
```

```
\langle 223 \rangle n = a, c, g or t
```

<220>

<221> Unsure

10 <222> (358)..(358)

<223> n = a, c, g or t

15

<220> **20**

<221> Unsure

<222> (379)..(379)

25 <223> n = a, c, g or t

30 <220>

<221> Unsure

35 <222> (392)..(392)

 $\langle 223 \rangle$ n = a, c, g or t

40

<220>

45 <221> Unsure

<222> (394)..(395)

<223> n = a, c, g or t

50

```
<221> Unsure
```

$$5 < 223 > n = a, c, g or t$$

<220>

<221> Unsure

15 <222> (413)..(413)

<223> n = a, c, g or t

20

<220>

25 <221> Unsure

<222> (416)..(416)

<223> n = a, c, g or t

30

35 <220>

<221> Unsure

<222> (418)..(418)

40

<223> n = a, c, g or t

45

<220>

<221> Unsure

50 <222> (423)..(423)

<223> n = a, c, g or t

```
<220>
5 <221> Unsure
    <222> (425)..(425)
    \langle 223 \rangle n = a, c, g or t
10
15 <220>
    <221> Unsure
     <222> (429)..(430)
20
     \langle 223 \rangle n = a, c, g or t
25
     <220>
     <221> Unsure
30
     <222> (434)..(434)
     <223> n = a, c, g or t
35
     <220>
40
     <221> Unsure
     <222> (439)..(440)
45
    <223> n = a, c, g or t
50
     <220>
     <221> Unsure
 55
    <222> (442)..(442)
```

.

```
\langle 223 \rangle n = a, c, g or t
```

5

<220>

<221> Unsure

10

<223> n = a, c, g or t

<222> (446)..(447)

15

<220>

20

<221> Unsure

<222> (454)..(454)

25 <223> n = a, c, g or t

30

<220>

<221> Unsure

35 <222> (456)..(456)

 $\langle 223 \rangle$ n = a, c, g or t

40

<220>

45 <221> Unsure

<222> (459)..(460)

 $\langle 223 \rangle$ n = a, c, g or t

50

```
<221> Unsure
```

$$5$$
 <223> n = a, c, g or t

<220>

<221> Unsure

15 <222> (473)..(474)

 $\langle 223 \rangle$ n = a, c, g or t

20

<220>

25 <221> Unsure

<222> (485)..(486)

<223> n = a, c, g or t

30

35 <220>

<221> Unsure

<222> (491)..(491)

40 <223> n = a, c, g or t

45

<220>

<221> Unsure

<222> (499)..(500)

<223> n = a, c, g or t

55

```
<220>
5 <221> Unsure
    <222> (502)..(502)
    <223> n = a, c, g or t
10
15 <220>
     <221> Unsure
     <222> (505)..(505)
20
     <223> n = a, c, g or t
25
     <220>
     <221> Unsure
30
     <222> (509)..(509)
     \langle 223 \rangle n = a, c, g or t
35
     <220>
40
     <221> Unsure
     <222> (513)..(513)
     \langle 223 \rangle n = a, c, g or t
45
 50
     <220>
     <221> Unsure
    <222> (516)..(517)
 55
```

 $\langle 223 \rangle$ n = a, c, g or t

5

<220>

<221> Unsure

10 <222> (520)..(520)

<223> n = a, c, g or t

15

20

<220>

<221> Unsure

<222> (525)..(525)

25 <223> n = a, c, g or t

30

<220>

<221> Unsure

35 <222> (528)..(528)

 $\langle 223 \rangle$ n = a, c, g or t

40

<220>

45 <221> Unsure

<222> (532)..(532)

<223> n = a, c, g or t

50

```
<221> Unsure
    <222> (534)..(534)
5 < 223 > n = a, c, g or t
10
    <220>
    <221> Unsure
   <222> (537)..(539)
15
    \langle 223 \rangle n = a, c, g or t
20
    <220>
25 <221> Unsure
     <222> (548)..(549)
     <223> n = a, c, g or t
30
35 <220>
     <221> Unsure
     <222> (552)..(552)
40
     <223> n = a, c, g or t
```

45
<220>
<221> Unsure
50
<222> (555)..(555)
<223> n = a, c, g or t

```
<220>
5 <221> Unsure
     <222> (557)..(557)
    \langle 223 \rangle n = a, c, g or t
10
15 <220>
     <221> Unsure
     <222> (562)..(562)
20
     \langle 223 \rangle n = a, c, g or t
25
     <220>
     <221> Unsure
30
     <222> (569)..(569)
     \langle 223 \rangle n = a, c, g or t
35
     <220>
40
      <221> Unsure
      <222> (586)..(587)
     \langle 223 \rangle n = a, c, g or t
45
 50
      <220>
      <221> Unsure
     <222> (590)..(590)
 55
```

```
\langle 223 \rangle n = a, c, g or t
```

<220>

<221> Unsure

10 <222> (592)..(592)

<223> n = a, c, g or t

15

<220>

20

<221> Unsure

<222> (594)..(594)

25 <223> n = a, c, g or t

30

<220>

<221> Unsure

35 <222> (597)..(597)

<223> n = a, c, g or t

40

<220>

45 <221> Unsure

<222> (602)..(603)

<223> n = a, c, g or t

50

<221> Unsure

<222> (606)..(606)

5 < 223 > n = a, c, g or t

10 <220>

<221> Unsure

15 <222> (611)..(611)

<223> n = a, c, g or t

20

<220>

25 <221> Unsure

<222> (618)..(619)

<223> n = a, c, g or t

30

35 <220>

<221> Unsure

<222> (622)..(622)

40 <223> n = a, c, g or t

45

<220>

<221> Unsure

<222> (626)..(626)

<223> n = a, c, g or t

55

```
<220>
5 <221> Unsure
    <222> (631)..(631)
    \langle 223 \rangle n = a, c, g or t
10
15 <220>
    <221> Unsure
    <222> (635)..(635)
20
     <223> n = a, c, g or t
25
     <220>
     <221> Unsure
30
     <222> (637)..(637)
     <223> n = a, c, g or t
35
     <220>
40
     <221> Unsure
     <222> (643)..(643)
     \langle 223 \rangle n = a, c, g or t
45
 50
      <220>
      <221> Unsure
    <222> (645)..(645)
 55
```

```
\langle 223 \rangle n = a, c, g or t
```

<220>

<221> Unsure

10

<223> n = a, c, g or t

<222> (648)..(648)

15

<220>

20

<221> Unsure

<222> (650)..(650)

25 <223> n = a, c, g or t

30

<220>

<221> Unsure

35 <222> (653)..(653)

 $\langle 223 \rangle$ n = a, c, g or t

40

<220>

45 <221> Unsure

<222> (655)..(655)

 $\langle 223 \rangle$ n = a, c, g or t

50

```
<221> Unsure
    <222> (658)..(658)
5 < 223 > n = a, c, g or t
10
    <220>
    <221> Unsure
   <222> (660)..(660)
15
    <223> n = a, c, g or t
20
    <220>
25 <221> Unsure
     <222> (663)..(663)
     \langle 223 \rangle n = a, c, g or t
30
35 <220>
     <221> Unsure
     <222> (668)..(668)
 40
     <223> n = a, c, g or t
 45
     <220>
     <221> Unsure
 50
      <222> (670)..(670)
```

 $\langle 223 \rangle$ n = a, c, g or t

```
<220>
5 <221> Unsure
    <222> (672)..(673)
    <223> n = a, c, g or t
10
15 <220>
    <221> Unsure
    <222> (677)..(677)
20
    <223> n = a, c, g or t
25
    <220>
    <221> Unsure
30
    <222> (679)..(679)
    <223> n = a, c, g or t
35
    <220>
40
    <221> Unsure
     <222> (683)..(683)
45
    <223> n = a, c, g or t
50
     <220>
     <221> Unsure
```

<222> (687)..(688)

```
\langle 223 \rangle n = a, c, g or t
```

<220>

<221> Unsure

10

<223> n = a, c, g or t

<222> (691)..(691)

15

<220>

20

<221> Unsure

<222> (693)..(693)

25 <223> n = a, c, g or t

30

<220>

<221> Unsure

35 <222> (696)..(696)

 $\langle 223 \rangle$ n = a, c, g or t

40

<220>

45 <221> Unsure

<222> (703)..(703)

 $\langle 223 \rangle$ n = a, c, g or t

50

```
<221> Unsure
```

$$5 < 223 > n = a, c, g or t$$

<220>

<221> Unsure

15 <222> (714)..(714)

<223> n = a, c, g or t

20

<220>

25 <221> Unsure

<222> (720)..(721)

<223> n = a, c, g or t

30

35 <220>

<221> Unsure

<222> (725)..(725)

40

<223> n = a, c, g or t

45

<220>

<221> Unsure

50 <222> (727)..(727)

 $\langle 223 \rangle$ n = a, c, g or t

```
<220>
5 <221> Unsure
    <222> (730)..(731)
    <223> n = a, c, g or t
10
15 <220>
    <221> Unsure
    <222> (734)..(734)
20
    <223> n = a, c, g or t
25
     <220>
     <221> Unsure
30
     <222> (750)..(750)
     <223> n = a, c, g or t
35
     <220>
40
     <221> Unsure
     <222> (755)..(756)
    \langle 223 \rangle n = a, c, g or t
45
 50
     <220>
     <221> Unsure
     <222> (760)..(762)
 55
```

```
\langle 223 \rangle n = a, c, g or t
5
     <220>
     <221> Unsure
10
     <222> (767)..(767)
     \langle 223 \rangle n = a, c, g or t
15
     <220>
20
     <221> Unsure
     <222> (775)..(775)
25
   \langle 223 \rangle n = a, c, g or t
30
     <220>
     <221> Unsure
35 <222> (780)..(781)
      \langle 223 \rangle n = a, c, g or t
40
     <220>
```

55 <220>

50

45 <221> Unsure

<222> (784)..(784)

 $\langle 223 \rangle$ n = a, c, g or t

```
<221> Unsure
    <222> (787)..(787)
5 < 223 > n = a, c, g or t
10
    <220>
    <221> Unsure
15
   <222> (789)..(789)
    \langle 223 \rangle n = a, c, g or t
20
    <220>
25 <221> Unsure
     <222> (794)..(796)
     \langle 223 \rangle n = a, c, g or t
30
35 <220>
     <221> Unsure
     <222> (802)..(802)
40
     <223> n = a, c, g or t
45
```

<220>
<221> Unsure
50
<222> (804)..(804)
<223> n = a, c, g or t
55

```
<220>
5 <221> Unsure
    <222> (806)..(806)
    <223> n = a, c, g or t
10
15 <220>
    <221> Unsure
    <222> (814)..(814)
20
    <223> n = a, c, g or t
25
    <220>
    <221> Unsure
30
    <222> (826)..(827)
    <223> n = a, c, g or t
35
    <220>
40
    <221> Unsure
    <222> (834)..(834)
   <223> n = a, c, g or t
45
50
     <220>
     <221> Unsure
    <222> (847)..(847)
55
```

```
<223> n = a, c, g or t
```

<220>

<221> Unsure

10

<222> (850)..(850)

 $\langle 223 \rangle$ n = a, c, g or t

15

<220>

20

<221> Unsure

<222> (853)..(855)

25 $\langle 223 \rangle$ n = a, c, g or t

30

<220>

<221> Unsure

35 <222> (864)..(865)

 $\langle 223 \rangle$ n = a, c, g or t

40

<220>

45 <221> Unsure

<222> (869)..(870)

 $\langle 223 \rangle$ n = a, c, g or t

50

```
<221> Unsure
<222> (872)..(872)
5 <223> n = a, c, g or t
```

<220>

20

25 <221> Unsure <222> (878)..(878) <223> n = a, c, g or t 30

45
<220>
<221> Unsure
50
<222> (887)..(887)
<223> n = a, c, g or t

```
<220>
5 <221> Unsure
    <222> (889)..(889)
    \langle 223 \rangle n = a, c, g or t
10
15 <220>
    <221> Unsure
    <222> (900)..(900)
20
     \langle 223 \rangle n = a, c, g or t
25
     <220>
     <221> Unsure
30
     <222> (902)..(902)
     <223> n = a, c, g or t
35
     <220>
40
     <221> Unsure
     <222> (904)..(905)
    <223> n = a, c, g or t
45
50
     <220>
     <221> Unsure
     <222> (910)..(910)
 55
```

```
\langle 223 \rangle n = a, c, g or t
```

<220>

<221> Unsure

10 <222> (915)..(916)

 $\langle 223 \rangle$ n = a, c, g or t

15

<220>

20

<221> Unsure

<222> (918)..(918)

25 $\langle 223 \rangle$ n = a, c, g or t

30

<220>

<221> Unsure

35 <222> (923)..(923)

 $\langle 223 \rangle$ n = a, c, g or t

40

<220>

45 <221> Unsure

<222> (925)..(925)

 $\langle 223 \rangle$ n = a, c, g or t

50

```
<221> Unsure
    <222> (930)..(930)
5 < 223 > n = a, c, g or t
10
    <220>
     <221> Unsure
   <222> (933)..(935)
15
     \langle 223 \rangle n = a, c, g or t
20
     <220>
25 <221> Unsure
     <222> (937)..(938)
     \langle 223 \rangle n = a, c, g or t
30
35 <220>
     <221> Unsure
     <222> (944)..(946)
40
     \langle 223 \rangle n = a, c, g or t
45
```

<220>
<221> Unsure

50
<222> (949)..(949)

<223> n = a, c, g or t

```
<220>
5 <221> Unsure
    <222> (952)..(952)
    \langle 223 \rangle n = a, c, g or t
10
15 <220>
    <221> Unsure
    <222> (954)..(954)
20
     <223> n = a, c, g or t
25
     <220>
     <221> Unsure
30
     <222> (956)..(956)
     \langle 223 \rangle n = a, c, g or t
35
     <220>
40
     <221> Unsure
     <222> (958)..(960)
45
    \langle 223 \rangle n = a, c, g or t
50
     <220>
      <221> Unsure
    <222> (962)..(967)
55
```

```
<223> n = a, c, g or t
```

5

<220>

<221> Unsure

10 <222> (970)..(972)

<223> n = a, c, g or t

15

<220>

20

<221> Unsure

<222> (974)..(974)

25 <223> n = a, c, g or t

30

<220>

<221> Unsure

35 <222> (978)..(978)

 $\langle 223 \rangle$ n = a, c, g or t

40

<220>

45 <221> Unsure

<222> (981)..(982)

 $\langle 223 \rangle$ n = a, c, g or t

50

```
<221> Unsure
```

$$5$$
 <223> n = a, c, g or t

<220>

<221> Unsure

15 <222> (1000)..(1000)

 $\langle 223 \rangle$ n = a, c, g or t

20

<220>

25 <221> Unsure

<222> (1005)..(1006)

 $\langle 223 \rangle$ n = a, c, g or t

30

35 <220>

<221> Unsure

<222> (1009)..(1012)

40 $\langle 223 \rangle$ n = a, c, g or t

45

<220>

<221> Unsure

<222> (1015)..(1015)

<223> n = a, c, g or t

55

```
<220>
5 <221> Unsure
    <222> (1027)..(1027)
    \langle 223 \rangle n = a, c, g or t
10
   <220>
15
    <221> Unsure
    <222> (1030)..(1030)
20
    <223> n = a, c, g or t
25
    <220>
    <221> Unsure
30
    <222> (1032)..(1032)
     <223> n = a, c, g or t
35
     <220>
40
     <221> Unsure
     <222> (1035)..(1035)
45
    <223> n = a, c, g or t
50
     <220>
     <221> Unsure
55
     <222> (1039)..(1039)
```

```
\langle 223 \rangle n = a, c, g or t
```

<220>

<221> Unsure

10 <222> (1042)..(1042)

 $\langle 223 \rangle$ n = a, c, g or t

15

<220> **20**

<221> Unsure

<222> (1045)..(1047)

25 <223> n = a, c, g or t

30 <220>

<221> Unsure

35 <222> (1055)..(1055)

 $\langle 223 \rangle$ n = a, c, g or t

40

<220>

45 <221> Unsure

<222> (1061)..(1061)

<223> n = a, c, g or t

50

```
<221> Unsure
```

$$5 < 223 > n = a, c, g or t$$

10 <220>

<221> Unsure

15 <222> (1081)..(1082)

<223> n = a, c, g or t

20

<220>

25 <221> Unsure

<222> (1086)..(1086)

<223> n = a, c, g or t

30

35 <220>

<221> Unsure

<222> (1091)..(1091)

40 <223> n = a, c, g or t

45

<220>

<221> Unsure

<222> (1094)..(1096)

<223> n = a, c, g or t

55

```
<220>
5 <221> Unsure
    <222> (1103)..(1103)
    <223> n = a, c, g or t
10
   <220>
15
    <221> Unsure
    <222> (1105)..(1107)
20
    <223> n = a, c, g or t
25
     <220>
    <221> Unsure
30
    <222> (1110)..(1111)
     <223> n = a, c, g or t
35
     <220>
40
     <221> Unsure
     <222> (1116)..(1118)
    \langle 223 \rangle n = a, c, g or t
45
50
     <220>
     <221> Unsure
     <222> (1126)..(1127)
55
```

```
<223> n = a, c, g or t
```

5

<220>

<221> Unsure

10 <222> (1130)..(1130)

<223> n = a, c, g or t

15

<220> 20

<221> Unsure

<222> (1132)..(1134)

25 <223> n = a, c, g or t

30 <220>

<221> Unsure

35 <222> (1136)..(1136)

<223> n = a, c, g or t

40

<220>

45 <221> Unsure

<222> (1141)..(1141)

<223> n = a, c, g or t

50

```
<221> Unsure
<222> (1143)..(1144)
5 <223> n = a, c, g or t
```

<220>

20

25 <221> Unsure <222> (1152)..(1155) <223> n = a, c, g or t

45

<220>
50

<221> Unsure

<222> (1165)..(1166)

<223> n = a, c, g or t

73

```
<220>
5 <221> Unsure
    <222> (1169)..(1170)
    \langle 223 \rangle n = a, c, g or t
10
15 <220>
     <221> Unsure
     <222> (1172)..(1172)
20
     \langle 223 \rangle n = a, c, g or t
25
     <220>
     <221> Unsure
30
     <222> (1176)..(1178)
     <223> n = a, c, g or t
35
     <220>
40
     <221> Unsure
     <222> (1180)..(1180)
45
     \langle 223 \rangle n = a, c, g or t
50
      <220>
      <221> Unsure
 55
      <222> (1182)..(1182)
```

```
\langle 223 \rangle n = a, c, g or t
```

5

<220>

<221> Unsure

10 <222> (1184)..(1184)

<223> n = a, c, g or t

15

<220>

20

<221> Unsure

<222> (1186)..(1187)

25 <223> n = a, c, g or t

30

<220>

<221> Unsure

35 <222> (1189)..(1189)

<223> n = a, c, g or t

40

<220>

45 <221> Unsure

<222> (1208)..(1208)

<223> n = a, c, g or t

50

55 <220>

```
<221>
           Unsure
    <222>
           (1212)..(1212)
5
    \langle 223 \rangle n = a, c, g or t
10
    <220>
    <221>
           Unsure
15
    <222>
            (1215)..(1216)
    <223> n = a, c, g or t
20
     <220>
25
     <221>
            Unsure
     <222>
           (1227)..(1227)
     <223> n = a, c, g or t
30
35
     <220>
     <221>
            Unsure
     <222>
            (1232)..(1232)
40
     <223> n = a, c, g or t
45
     <400> 17
     ctgaggctgg ggctggggct ggggctgagg ctggagctgg gactgaggct ggggctgggg
                                                                               60
                                                                             120
     ctggggctgg ggctgaggct ggggctgggg ctggggctgg ggctgggact gaggctgggg
50
     ctggggctga ggctggggct gggactgagg ctggggctgg gactgaggct ggggctgggg
                                                                             180
                                                                              240
     ctgaggttgg ggctgggact gaggctgggg ctanggctgg ggctgaggct ggggctaggg
55
     ctnaggctga ggttggggct ggggctggng ctgacgctgg ggctgaggct nggnctgagg
                                                                              300
```

	ctggagctgg	ggctgangct	ggggctgggg	ctgnngctga	nctggggctg	aggeteenge	360
	tgaagctgag	gctggggcnt	aacgctgagc	tngnngctgg	tgctnatgct	tgnctnanaa	420
5	tgngnatgnn	ctgnggctnn	cntccnngac	aaananttnn	aacttgnggt	ttnntcctgg	480
	gaatnnaaat	ntccaccann	tntgnaaant	tangcnnttn	ggacnaanaa	anantcnnna	540
10 15	antctaannc	cnccnanana	tnctaggana	tgtttacaca	agcaannatn	tnancanatc	600
	annccncatc	ntttaaannt	gnattnaaaa	naaanantga	aangnccncn	ttnanccncn	660
	ttnttaantn	gnnaacntna	ctnactnnca	nanatnttaa	aantnggaaa	caancacacn	720
	ntttnanacn	nctnacttcg	gagaataaan	actcnncctn	nnaatgnctc	agacnacccn	780
	ntcnttngng	cacnnnaaaa	tnanancctt	cttnttttga	tacccnnaaa	aaanaaaaac	840
20 25	cactttnaan	aannntttta	ttcnnaatnn	cnannntnta	canaggntnt	tcacattctn	900
	ancnnatttn	tccanntnta	ttntnccctn	ttnnncnnat	attnnncana	ananantnnn	960
	cnnnnnacn	nnenecenta	nnaatattgc	acaacnnaan	aatannacnn	nnttntataa	1020
	aaatcanaan	antancacna	cnccnnnatc	cctanaagtg	nttaaaactc	tatgtncnnc	1080
	nntctntaat	ntannncaaa	tanannnctn	nttggnnnat	caccannacn	tnnnanaccc	1140
30	nanncctant	annnntacnn	cagcnncann	tncttnnntn	tntntnnana	acccaactcc	1200
	cttatttnat	ancanntcac	tctcccntat	cn			1232
		,					
35	<210> 18						
	<211> 387						
	<212> PRT						
40	<213> Home	o sapiens					
	<400> 18						
45	Met Tyr Se 1	r Met Met M 5	et Glu Thr	Asp Leu His 10	Ser Pro Gl	y Gly Ala 15	

Gln Ala Pro Thr Asn Leu Ser Gly Pro Ala Gly Ala Gly Gly Gly 20 25 30

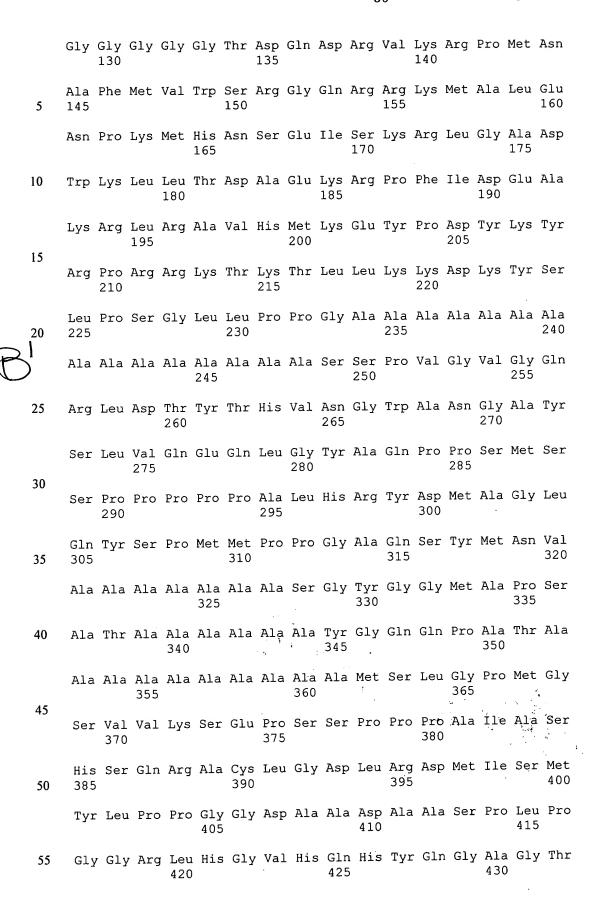
50

Asp Arg Val Lys Arg Pro Met Asn Ala Phe Met Val Trp Ser Arg Gly 50 55 60

	65	Arg	ALG	гуз	мес	70	GIII	Giu	ASII	FIO	75	Mec	1113	ASII	Der	80
5	Ile	Ser	Lys	Arg	Leu 85	Gly	Ala	Glu	Trp	Lys 90	Val	Met	Ser	Glu	Ala 95	Glu
	Lys	Arg	Pro	Phe 100	Ile	Asp	Glu	Ala	Lys 105	Arg	Leu	Arg	Ala	Leu 110	His	Met
10	Lys	Glu	His 115	Pro	Asp	Tyr	Lys	Tyr 120	Arg	Pro	Arg	Arg	Lys 125	Thr	Lys	Thr
15	Leu	Leu 130	Lys	Lys	Asp	Lys	Tyr 135	Ser	Leu	Ala	Gly	Gly 140	Leu	Leu	Ala	Ala
13	Gly 145	Ala	Gly	Gly	Gly	Gly 150	Ala	Ala	Val	Ala	Met 155	Gly	Val	Gly	Val	Gly 160
20	Val	Gly	Ala	Ala	Pro 165	Val	Gly	Gln	Arg	Leu 170	Glu	Ser	Pro	Gly	Gly 175	Ala
	Ala	Gly	Gly	Ala 180	Tyr	Ala	His	Val	Asn 185	Gly	Trp	Ala	Asn	Gly 190	Ala	Туг
25	Pro	Gly	Ser 195	Val	Ala	Ala	Ala	Ala 200	Ala	Ala	Ala	Ala	Met 205	Met	Gln	Glu
20	Ala	Gln 210	Leu	Ala	Tyr	Gly	Gln 215	His	Pro	Gly	Ala	Gly 220	Gly	Ala	His	Pro
30	His 225	Arg	Thr	Pro	Ala	His 230	Pro	His	Pro	His	His 235	Pro	His	Ala	His	Pro 240
35	His	Asn	Pro	Gln	Pro 245	Met	His	Arg	Tyr	Asp 250	Met	Gly	Ala	Leu	Gln 255	Туз
	Ser	Pro	Ile	Ser 260	Asn	Ser	Gln	Gly	Tyr 265	Met	Ser	Ala	Ser	Pro 270	Ser	Gly
40	Tyr	Gly	Gly 275	Leu	Pro	Tyr	Gly	Ala 280	Ala	Ala	Ala	Ala	Ala 285	Ala	Ala	His
45	Gln	Asn 290	Ser	Ala	Val	Ala	Ala 295	Ala	Ala	Ala	Ala	Ala 300	Ala	Ala	Ser	Se
45	Gly 305		Leu	Gly	Ala	Leu 310		Ser	Leu	Val	Lys 315	Ser	Glu	Pro	Ser	Gl: 32
50	Ser	Pro	Pro	Ala	Pro 325		His	Ser	Arg	Ala 330		Cys	Pro	Gly	Asp 335	Le
	Arg	Glu	Met	Ile 340		Met	Tyr	Leu	Pro 345		Gly	Glu	Gly	Gly 350	Asp	Pr
55	Ala	Ala	Ala 355		Ala	Ala	Ala	Ala 360		Ser	Arg	Leu	His 365		Leu	Pr

Gln His Tyr Gln Gly Ala Gly Ala Gly Val Asn Gly Thr Val Pro Leu 375 370 Thr His Ile 5 385 <210> 19 317 <211> 10 <212> PRT <213> Homo sapiens 15 <400> 19 Met Tyr Asn Met Met Glu Thr Glu Leu Lys Pro Pro Gly Pro Gln Gln 20 Thr Ser Gly Gly Gly Gly Asn Ser Thr Ala Ala Ala Gly Gly Asn Gln Lys Asn Ser Pro Asp Arg Val Lys Arg Pro Met Asn Ala Phe 25 Met Val Trp Ser Arg Gly Gln Arg Arg Lys Met Ala Gln Glu Asn Pro 30 Lys Met His Asn Ser Glu Ile Ser Lys Arg Leu Gly Ala Glu Trp Lys Leu Leu Ser Glu Thr Glu Lys Arg Pro Phe Ile Asp Glu Ala Lys Arg 35 Leu Arg Ala Leu His Met Lys Glu His Pro Asp Tyr Lys Tyr Arg Pro Arg Arg Lys Thr Lys Thr Leu Met Lys Lys Asp Lys Tyr Thr Leu Pro 40 120 Gly Gly Leu Leu Ala Pro Gly Gly Asn Ser Met Ala Ser Gly Val Gly 135 45 Val Gly Ala Gly Leu Gly Ala Gly Val Asn Gln Arg Met Asp Ser Tyr 145 150 Ala His Met Asn Gly Trp Ser Asn Gly Ser Tyr Ser Met Met Gln Asp 170 50 Gln Leu Gly Tyr Pro Gln His Pro Gly Leu Asn Ala His Gly Ala Ala 185 180 Gln Met Gln Pro Met His Arg Tyr Asp Val Ser Ala Leu Gln Tyr Asn 55 200 205 195

```
Ser Met Thr Ser Ser Gln Thr Tyr Met Asn Gly Ser Pro Thr Tyr Ser
                             215
    Met Ser Tyr Ser Gln Gln Gly Thr Pro Gly Met Ala Leu Gly Ser Met
                         230
    Gly Ser Val Val Lys Ser Glu Ala Ser Ser Ser Pro Pro Val Val Thr
                                         250
                     245
    Ser Ser Ser His Ser Arg Ala Pro Cys Gln Ala Gly Asp Leu Arg Asp
10
    Met Ile Ser Met Tyr Leu Pro Gly Ala Glu Val Pro Glu Pro Ala Ala
             275
15
     Pro Ser Arg Leu His Met Ser Gln His Tyr Gln Ser Gly Pro Val Pro
                             295
    Gly Thr Ala Ile Asn Gly Thr Leu Pro Leu Ser His Met
                         310
20
           20
     <210>
            443
     <211>
25
     <212>
           PRT
     <213> Homo sapiens
30
     <400> 20
     Met Arg Pro Val Arg Glu Asn Ser Ser Gly Ala Arg Ser Pro Arg Val
35
     Pro Ala Asp Leu Ala Arg Ser Ile Leu Ile Ser Leu Pro Phe Pro Pro
     Asp Ser Leu Ala His Arg Pro Pro Ser Ser Ala Pro Thr Glu Ser Gln
40
                                  40
     Gly Leu Phe Thr Val Ala Ala Pro Ala Pro Gly Ala Pro Ser Pro Pro
                              55
45
     Ala Thr Leu Ala His Leu Leu Pro Ala Pro Ala Met Tyr Ser Leu Leu
     Glu Thr Glu Leu Lys Asn Pro Val Gly Thr Pro Thr Gln Ala Ala Gly
                                          90
50
     Thr Gly Gly Pro Ala Ala Pro Gly Gly Ala Gly Lys Ser Ser Ala Asn
                  100
     Ala Ala Gly Gly Ala Asn Ser Gly Gly Gly Ser Ser Gly Gly Ala Ser
 55
                                                       125
              115
                                  120
```



Ala Val Asn Gly Thr Val Pro Leu Thr His Ile 435 440 <210> 21 5 276 <211> <212> PRT 10 <213> Homo sapiens <400> 21 15 Met Ser Lys Pro Val Asp His Val Lys Arg Pro Met Asn Ala Phe Met Val Trp Ser Arg Ala Gln Arg Arg Lys Met Ala Gln Glu Asn Pro Lys 20 25 Met His Asn Ser Glu Ile Ser Lys Arg Leu Gly Ala Glu Trp Lys Leu Leu Thr Glu Ser Glu Lys Arg Pro Phe Ile Asp Glu Ala Lys Arg Leu 25 Arg Ala Met His Met Lys Glu His Pro Asp Tyr Lys Tyr Arg Pro Arg 30 Arg Lys Pro Lys Thr Leu Leu Lys Lys Asp Lys Phe Ala Phe Pro Val Pro Tyr Gly Leu Gly Gly Val Ala Asp Ala Glu His Pro Ala Leu Lys 35 Ala Gly Ala Gly Leu His Ala Gly Ala Gly Gly Leu Val Pro Glu 115 Ser Leu Leu Ala Asn Pro Glu Lys Ala Ala Ala Ala Ala Ala Ala Ala 40 Ala Ala Arg Val Phe Phe Pro Gln Ser Ala Ala Ala Ala Ala Ala Ala 45 Ala Ala Ala Ala Ala Gly Ser Pro Tyr Ser Leu Leu Asp Leu Gly 165 170 Ser Lys Met Ala Glu Ile Ser Ser Ser Ser Ser Gly Leu Pro Tyr Ala 50 Ser Ser Leu Gly Tyr Pro Thr Ala Gly Ala Gly Ala Phe His Gly Ala 205 55

215

210

Ser His Pro Ser Pro Gly Asn Pro Gly Tyr Met Ile Pro Cys Asn Cys 230 235 Ser Ala Trp Pro Ser Pro Gly Leu Gln Pro Pro Leu Ala Tyr Ile Leu 5 Leu Pro Gly Met Gly Lys Pro Gln Leu Asp Pro Tyr Pro Ala Ala Tyr 265 10 Ala Ala Ala Leu 275 <210> 22 15 <211> 533 <212> PRT <213> Homo sapiens 20 <400> 22 Met Leu Leu Asp Ala Gly Pro Gln Phe Pro Ala Ile Gly Val Gly Ser 25 Phe Ala Arg His His His Ser Ala Ala Ala Ala Ala Ala Ala Ala 30 Ala Glu Met Gln Asp Arg Glu Leu Ser Leu Ala Ala Gln Asn Gly Phe Val Asp Ser Ala Ala Ala His Met Gly Ala Phe Lys Leu Asn Pro 35 Gly Ala His Glu Leu Ser Pro Gly Gln Ser Ser Ala Phe Thr Ser Gln Gly Pro Gly Ala Tyr Pro Gly Ser Ala Ala Ala Ala Ala Ala Ala Ala 40 Ala Leu Gly Pro His Ala Ala His Val Gly Ser Tyr Ser Gly Pro Pro 45 Phe Asn Ser Thr Arg Asp Phe Leu Phe Arg Ser Ala Arg Leu Pro Gly 115 120 Thr Ser Ala Pro Gly Gly Gly Gln His Gly Leu Phe Gly Pro Gly Ala 50 Gly Gly Leu His His Ala His Ser Asp Ala Gln Gly His Leu Leu Phe 160 155 Pro Gly Leu Pro Glu Gln His Gly Pro His Gly Ser Gln Asn Val Leu 55

170

Asn Gly Gln Met Arg Leu Gly Leu Pro Gly Glu Val Phe Gly Arg Ser Glu Gln Tyr Arg Gln Val Ala Ser Pro Arg Thr Asp Pro Tyr Ser Ala Ala Gln Leu His Asn Gln Tyr Gly Pro Met Asn Met Asn Met Gly Met Asn Met Ala Ala Ala Ala His His His His His His His His His Pro Gly Ala Phe Phe Arg Tyr Met Arg Gln Gln Cys Ile Lys Gln Glu Leu Ile Cys Lys Trp Ile Asp Pro Glu Gln Leu Ser Asn Pro Lys Lys Ser Cys Asn Lys Thr Phe Ser Thr Met His Glu Leu Val Thr His Val Ser Val Glu His Val Gly Gly Pro Glu Gln Ser Asn His Val Cys Phe Trp Glu Glu Cys Pro Arg Glu Gly Lys Pro Phe Lys Ala Lys Tyr Lys Leu Val Asn His Ile Arg Val His Thr Gly Glu Lys Pro Phe Pro Cys Pro Phe Pro Gly Cys Gly Lys Val Phe Ala Arg Ser Glu Asn Leu Lys Ile His Lys Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Glu Phe Glu Gly Cys Asp Arg Arg Phe Ala Asn Ser Ser Asp Arg Lys Lys His Met His Val His Thr Ser Asp Lys Pro Tyr Leu Cys Lys Met Cys Asp Lys Ser Tyr Thr His Pro Ser Ser Leu Arg Lys His Met Lys Val His Glu Ser Ser Pro Gln Gly Ser Glu Ser Ser Pro Ala Ala Ser Ser Gly Tyr Glu Ser Ser Thr Pro Pro Gly Leu Val Ser Pro Ser Ala Glu Pro Gln Ser Ser Ser Asn Leu Ser Pro Ala Val Ser Ala Val His Arg Gly Gly Gly

Ser Gly Ser Gly Gly Ala Gly Gly Gly Ser Gly Gly Ser Gly Ser 490 495

3

Gly Gly Ser Gly Thr Ala Gly Gly His Ser Gly Leu Ser Ser Asn Phe 515 520 525

10 Asn Glu Trp Tyr Val 530